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COMPUTERWORLD

BUSH ■ CLINTON: Technology Imperatives See Page 25

Paper products player axes services unit

Kimberly-Clark said to eye sale of group

BY NELL MARGOLIS
CW STAFF

DALLAS — Kimberly-Clark Corp. is quietly dismantling — and may be poised to sell — a subsidiary that it spun out in 1988 to rocket the $6.8 billion paper products player into the outsourcing and software development markets.

Some 43 staff members at Kimberly-Clark Computer Services, Inc. received pink slips late last month, bringing the subsidiary's head count down to about 25, a Kimberly-Clark spokeswoman said.



The computer services arm had 100 employees at its peak and was down to about 68 before the layoff.

Kimberly-Clark Computer Services "is discontinuing all business development," spokeswoman Tina Barry said.

Back to basics

The parent company — which is widely viewed as being among the nation's most enlightened users of information technology — will refocus its resources on its core paper products business, particularly as that business expands overseas, said Gary McGinnis, former information technology vice president at Kimberly-Clark Computer Services.

The layoff, Barry confirmed, leaves just the bare-bones manpower needed to honor the company's stable of software development contracts — a list that includes customers such as IBM subsidiary Integrated Systems Solutions Corp. and Diamond

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Host makers: Let's make a deal

IBM, HDS, Amdahl offering 40% to 50% discounts on mainframe gear

BY JOHANNA AMBROSIO
CW STAFF

Mainframe vendors are caught up in a discount frenzy that users last week described as a mix of *The Price is Right* and Crazy Eddie's.

The well-known television game show and the now-defunct chain of East Coast electronics stores have nothing on the 40% to 50% discounts now being offered by all three major mainframe vendors — IBM, Hitachi Data Systems Corp. and Amdahl Corp., users and other observers said.

A vice president at a major grocery wholesaler who recently completed negotiations for six IBM Enterprise System/9000 models said he was offered a hard-dollar discount of 20%, which brought the cost of a $10 million machine down to about $8 million. IBM also threw in soft-dollar discounts, such as some free software licenses and maintenance for a few months, which brought the total discount into the 40% range.

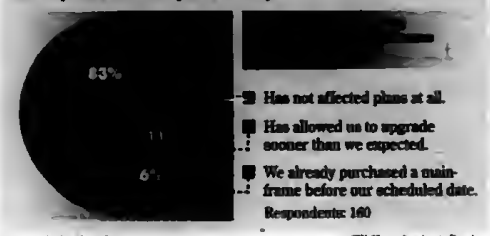
"It's incredible," he said. "All the vendors are wheeling and dealing."

Specific discounts are based on the hardware and software in-

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Vendors bearing bargains

Discounts had little effect on the majority of respondents surveyed but did persuade some to purchase early



Respondents: 160

Source: CW Database Division

CW Chart: Stephanie Faucher

Teamwork key to workgroup success

BY ROSEMARY HAMILTON
CW STAFF

SAN JOSE, Calif. — Workgroup computing has been touted as the next savior of productivity, but information systems executives and observers said it will be a surefire dud unless companies first address the organizational challenges it presents.

"It is a big-time change, even if you're used to automation, and you have to be mindful of that," said Elaine Bond, a senior consultant and fellow at The Chase Manhattan Bank NA, a Lotus Development Corp. Notes user site.

At the Groupware '92 conference held here last week, many executives said workgroup computing has as much to do with work processes and people as it does with technology.

Executives said that to make workgroup projects worthwhile, managers should consider two key strategies: implementing tools for a specific business need or process and being ready to motivate employees to work in teams.

For example, American Express Co. does not look at groupware as a technology issue alone, said Joseph Caruso, director of corporate systems and technology. Instead, it is rolled into the company's overall quality initiative and applied as part of this corporate strategy.

"Groupware isn't a onetime fix," Caruso said. "It will be part of a continual process."

Looking for a fix

Several managers who now claim success with groupware said the tools were brought in to fix a specific problem.

Sheldon Laube, national director of information and tech-

Continued on page 14

IS cover-up charged in system kill

Did AMR deception do in travel system?

BY MARK HALPER
CW STAFF

FORT WORTH, Texas — The outsourcer that was developing the highly touted Confirm reservation system for a travel industry consortium may have covered up deep-rooted technical problems long before they emerged at a user site, according to a letter written by Max Hopper, American Airlines' information systems chief.

Word of the alleged deception spread last week as outsourcer AMR Information Services, Inc. and its three user partners — Hilton Hotels Corp., Marriott Corp. and Budget Rent A Car Corp. — discussed how to dismantle the travel information consortium, known as Intrico, now that Confirm development has ceased.

A source close to Intrico said the alleged cover-up is believed to be a focal point in the negotiations as the three users consider whether they were misled by AMR Information Services into continuing to invest in an operation plagued with problems in da-

Continued on page 10

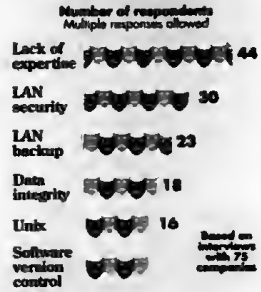
PLATFORM PLUNGE

Downsizing thrills 'n' chills

Small systems, big problems

LAN-related issues rank high on users' lists of downsizing concerns

Number of respondents
Multiple responses allowed



Source: Forrester Research, Inc.

"The savings are there, but this is a daunting task," says Paul Ricker, IS vice president at G. Heileman Brewing Co.

Despite problems with cost overruns, a lack of skilled workers and various LAN headaches, there is hope for downsizers.

This week, *Computerworld* presents a special report on downsizing. **Part I: Executive Report** examines frontline frights and fixes, page 65. **Part II: In Depth** reveals tips and techniques to ensure success, page 69.

INSIDE



Apple's Ian Diery believes the Macintosh is positioned to fend off encroaching low-cost, Windows-based PCs. Page 12.

IBM partners with Blue Cross/Blue Shield of New Jersey to remedy rising health care costs. Page 6.

Early users say Novell's E-mail plan and Banyan's Vines 5.0 have shortcomings. Pages 4 and 44.

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7 Vendors might be flocking to **Intel's** DX2 66 chip, but users are still not terribly excited.

8 Borland releases new Quattro Pro sans **Lotus**-like menus, per a recent court order.

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Quotable

"The mind-set is different from what I've seen before. It's like going to a used car lot. No matter what kind of a great deal you get, you always walk away feeling like you've left money on the table."

DAVID MOORE
MELLON BANK

On mainframe discounts. See story page 1.

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The 5th Wave



EXECUTIVE BRIEFING

■ **Did AMR Corp.'s outsourcing subsidiary deceive investors** about the technological health of the now-sidelined Confirm travel reservation system? Could be, according to American Airlines' IS chief Max Hopper. **Page 1.**

■ **Downsizing isn't always the cost-saving magic bullet it's cracked up to be,** say IS chiefs at companies that are switching to smaller, networked computers. New market research studies confirm front-line reports of cost overruns, a shortage of skilled workers, poor LAN and systems administration and a lack of client/server tools and software. To avoid these pitfalls, consultants and seasoned IS managers advise choosing your applications carefully and linking them closely with user needs. **Pages 65 and 69.**

■ **IBM's networking blueprint for peaceful multiprotocol coexistence** benefits IBM developers more than it does users, observers say. **Page 8.**

■ **People issues can be as challenging as the technology** when implementing a workgroup strategy, IS executives at Groupware '92 say. **Page 1.**

■ **Companies are beginning to explore standardized career planning** for IS staffers. A new DPMA program outlines skill sets and academic backgrounds required for more than 200 professional IS job titles. **Page 80.**

■ **Guilty, says Judge Keeton: Borland infringed on Lotus copyrights to 1-2-3.** A trial is still to come, and Borland will appeal, but copies of Quattro Pro that assume the Lotus position are already making their way into the channel. **Page 8.**

■ **Mainframe discounts can range up to 50% and sometimes even more,** users say, as vendors scramble to compete. **Page 1.**

■ **OK, you've got thousands of images stored on optical discs.** How do you index them? It's a question that IS managers are tackling as imaging systems mature. **Page 53.**

■ **Kimberly-Clark folds its flagging computer services subsidiary** to refocus resources on its paper products core. **Page 1.**

■ **Straightening out the spaghetti wiring of data networks** may be getting easier with the advent of graphical configuration management systems. **Page 50.**

■ **Is the heat from Microsoft's Windows** starting to bake graphical user interface pioneer Apple? No, a top executive says: Apple is prepared to compete effectively in the future. **Page 12.**

■ **New Macintosh models are on the way, and prices may be falling** as Apple heads into a busy late-summer, early-fall season. A new PowerBook is here as of last week; new Macintoshes and price structures should be close behind. **Page 29.**

■ **Blue Cross/Blue Shield of New Jersey joins forces with Big Blue itself** in a technology development alliance aimed at speeding the Garden State to the forefront of automated managed health care. **Page 6.**

■ **On site this week:** Pacific Gas & Electric uses a lesson learned in the early stages of its PC strategy — i.e., you have to make the system look right — to shift from vanilla MS-DOS to a graphical environment. **Page 59.** When your clients have fangs and claws, you want your computer to do the job right. That's why pet motel Kennelwood Village has a multiuser DOS system. **Page 39.** A new approach to networking could save restaurant chain Friendly Ice Cream 87% in its annual transmission fees. **Page 47.** Portable computers help keep million-dollar race cars running at peak performance and could lead to improvements in the design of the family car. **Page 29.**

Attention All dBASE Users: Your Windows Have Arrived.

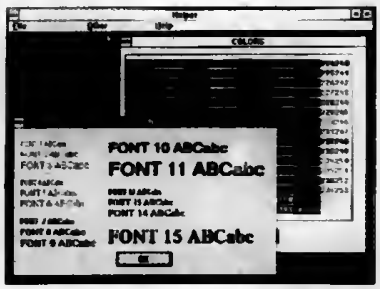


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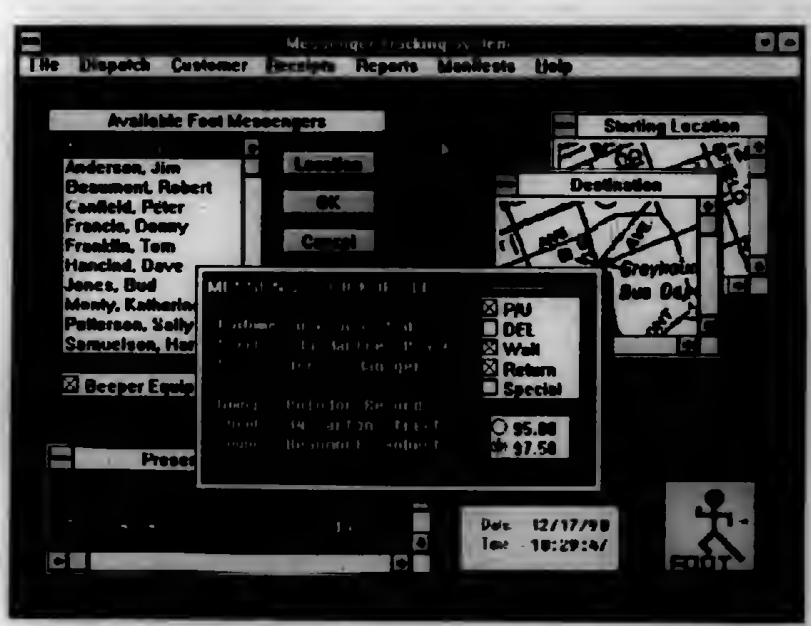
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Novell ships messaging server

Pricey product fails to support mix of messaging protocols and APIs

BY MICHELE DOSTERT
CW STAFF

PROVO, Utah — Amid fierce competition to snare corporate distributed messaging accounts, Novell, Inc. last week began shipping a version of its distributed NetWare Global Messaging Server. However, that version needs beefing up if the company is to follow through on its promise of interconnecting disparate electronic-mail systems.

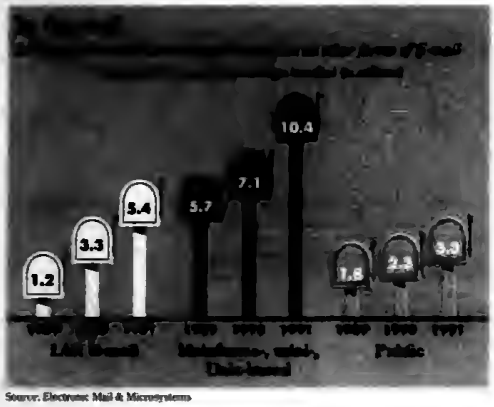
The current shortfall: Although the product is touted as an integrator/translator of different messaging protocols, the initial version handles just Message Handling System (MHS)-oriented messaging. Moreover, a high price and system complexity may forestall a quick acceptance, users said.

Novell also disclosed another facet of its enterprise strategy, announcing an enhanced version of its MHS mail service aimed at stand-alone workgroups or those that might want to hook into the corporate messaging backbone.

MHS 2.0, slated to ship in October, adds NetWare directory synchronization, support for longer names and enhanced asynchronous communication support to the previous version, Novell said.

First step only

While users such as Tony Ferlazzo, a product manager at Pacific Bell in San Ramon, Calif., who beta-tested NetWare Global Messaging Server, said they are encouraged that "Novell is thinking beyond MHS and recognizing that large organizations have more than a LAN-based system," NetWare Global Messaging Server does not yet support the mix of messaging protocols and application programming interfaces that are purported to be its eventual strength.



Source: Electronic Mail & Microsystems

The initial Global Messaging Server — a set of NetWare Loadable Modules announced in March for NetWare v3.11 servers [CW, March 23] — supports only Novell MHS-oriented messaging.

The capability to mix and match X.400, Simple Message Transfer Protocol, IBM's Systems Network Architecture Distribution System and other standard messaging environments — the functions that render the product an enterprise messaging switch — will follow sometime before the end of the year, according to Novell.

The absence of these other protocols means the message server is initially applicable primarily to NetWare-only environments. The X.APIA gateway interface to industry-standard X.400-based messaging servers will be the first non-MHS API supported.

Beta-test users said they are nonetheless encouraged by Novell's enterprise direction. "We have probably 3,000 E-mail users, including our vendors and customers, and a good 50% to 60% of all our messaging happens with outside customers and vendors that are not PC-based. This product will help us integrate those users," said J. R. Mose, a senior network engineer at Computerland Corp. in Walnut Creek, Calif.

Stumbling blocks

However, users mentioned two caveats: complexity and price. "It's a pretty complicated product to install," said Ferlazzo, although he indicated that this is the case with most multiprotocol messaging systems.

Mose noted that because "everyone's budgets are tight now," the server's $1,095 to $7,295 price "is a little high."

This is particularly an issue at large corporate sites where Novell is trying to position itself as an enterprise vendor. The $7,295 price is for 250 users; a 1,000-user network, then, would require four servers, totalling about $30,000, plus some hardware costs.

By comparison, SoftSwitch, Inc.'s $30,000 to $300,000 distributed Enterprise Mail Exchange, announced in June [CW, June 8], comes as a five-product family that does not charge on a per-user basis and includes Data General Corp.'s Aviion hardware.

SoftSwitch accounts typically support 20,000 users, the Wayne, Pa.-based company said. With its current pricing, a Novell solution in such environments would cost almost $600,000.

CW senior editor Joanie M. Wexler contributed to this story.

Making connections

Efforts to build both portability and connectivity in the same system have often come up short in one or both areas. Novell aims to change that with last week's introduction of NetWare PalmDOS 1.0, an operating system.

PalmDOS 1.0 is based on DR DOS 6.0 from Novell's Desktop Systems Group. It will allow palmtops equipped with Personal Computer Memory Card International Association cards — credit-card-size LAN adapters — to access remote files and use printers on the network, the company said.

Although no ship date for the system was specified, software developer's kits for the new PalmDOS 1.0 are shipping now, according to Novell.

Novell said it expects PalmDOS to eventually appear on a wide range of handheld products, including palmtop computers and other systems, such as pocket translators, data-capture devices and enhanced portable telephones, that deliver applications in hardware form.

Dataquest, Inc. in San Jose, Calif., has projected that the handheld market will grow from 1 million units sold in 1992 to 6 million units in 1995.

Novell intends to see that wherever data goes, LANs will be sure to follow.

MICHELE DOSTERT

Sun delivers Unix client link for NetWare LANs

BY JOANIE M. WEXLER
CW STAFF

BILLERICA, Mass. — Software that allows Novell, Inc. local-area network clients to access Unix servers began shipping last week from a Sun Microsystems, Inc. subsidiary to an industry hurtling toward the widespread amalgamation of disparate computing environments.

Observers attested to proliferating demand for such integration products, but a lack of Apple Computer, Inc. support has some early users of NetWare SunLink — announced in April by SunSelect [CW, April 20] — considering a NetWare-based integration attack instead.

NetWare SunLink, Sun's NetWare for Unix port, sits on top of Sun's Solaris Unix operating system as an alternative to Novell's NetWare v3.11, for which there are Novell NetWare Loadable Modules (NLM) that allow Unix clients to hook into NetWare servers.

Eases heavy load

Conversely, SunLink is aimed at Unix-heavy shops looking to allow NetWare clients to access Unix servers in order to satisfy the growing need for business units running different computing platforms to share corporatewide data.

"The industry is seeing a high necessity" for melding Unix and NetWare worlds because of the "sheer numbers" of installed PCs and the growth of Unix, said Kevin Orcutt, a systems analyst at Silver Spring, Md.-based Century Technologies, Inc., a NetWare SunLink beta-test site.

While NetWare SunLink is based on v3.11, not all of v3.11's functionality has yet been ported to the Sun product.

For example, NetWare v3.11 ships with the capability to route NetWare's IPX, Transmission Control Protocol/Internet Protocol and Apple's AppleTalk protocols within a corporate site. NetWare SunLink does not provide the AppleTalk capability — an issue for both Century and Antarctic Support Associates, another early NetWare SunLink user.

> "APPLETALK NOT BEING routed is definitely an issue."
>
> DAVE WALDEN
> ANTARCTIC

"My one dilemma with NetWare SunLink is the lack of Apple support," Orcutt said. He explained that vice presidents clamoring for network access in his firm have Macintoshes, and "you have to accommodate your VPs." The Apple support might influence whether he upgrades from NetWare v2.15 to v3.11 or to NetWare SunLink, he said.

"AppleTalk not being routed is definitely an issue," agreed Dave Walden, a senior analyst at Denver-based Antarctic, a contractor for the National Science Foundation (NSF). Walden accidentally tested NetWare SunLink for three weeks when SunSelect shipped it to him unrequested on two Unix servers he ordered for evaluation.

However, he said he intends to recommend NetWare SunLink to the NSF for procurement as an alternative to the current "painful" process of converting Macintosh files to DOS, then to Unix, through various utilities within Macintosh and Sun operating systems.

Orcutt said Sun told him that Novell has not released the Apple code to developers yet, but when it does, Sun will support AppleTalk routing.

Another minor issue, he said, is that "to gain full NetWare configuration options, you have to have both a PC and a Sun workstation." He explained that this is because not all of the control console packages from Novell have been made available to Sun yet. Orcutt indicated that he would like to see closer ties between the two firms "so more stuff would get ported over."

Novell options for Unix/NetWare integration include NLMs that allow the two networks to share file and print services or let NetWare clients run terminal emulation sessions on a Unix host.

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NEWS SHORTS

Storage Tek delays Iceberg, again

Storage Technology Corp. late last week said best testing and production of its high-end disk array will be delayed by at least one quarter from previously revised estimates. This means production units of the mass storage subsystem will not be available until the first quarter of next year, at the earliest. Beta testing is expected to commence in the fourth quarter, though a company spokesman refused to be pinned down on an exact time frame. The revised estimates are based on continuing complications encountered in integrating, testing and debugging the subsystem's microcode, the company said. Storage Tek had originally expected to beta-test the disk array — known as Iceberg — during the first half of 1992 and to begin production during the second half. Earlier this year, the Louisville, Colo., company pushed back beta testing and production to the third and fourth quarters, respectively.

OSF plans to rev Motif GUI

The Open Software Foundation (OSF) last week launched plans for the next generation of its Motif graphical user interface (GUI), inviting vendors to participate in an Aug. 18-19 workshop for the GUI Application Interoperability Architecture, or GAIA, project. The next version of Motif is to be expanded with an application programming interface that supports data interchange and application interoperability on the X Window System and between X and non-X environments.

TSC fires manufacturing exec

Chicago-based systems integrator Technology Solutions Co. last week abruptly dismissed Woodrow Chamberlain, vice president of its recently troubled manufacturing practice. It was under Chamberlain's watch that the manufacturing division hit a wall of uncollected receivables and came under suspicion for loose business practices [CW, July 13].

More router vendors take low road

Cisco Systems, Inc. and CrossComm Corp. are following in Proteon, Inc.'s recent footsteps to address simplified, inexpensive routing needs. The multiprotocol Cisco 3000 includes the user-demanded flash erasable programmable read-only memory (EPROM) for centralized router updating. Cisco also reduced the price of its low-end IGS router without flash EPROM by 20%, bringing some models in at around $4,000. CrossComm said it will unwrap today its ILAN Jr. for Token Ring, starting at $6,000.

Harris wins NASA pact

The Kennedy Space Center in Florida has awarded a contract to Harris Corp. for more than 300 Night Hawk real-time computers to be used with future space launches. The five-year contract is valued at more than $10 million, with options that could make it worth more than $15 million.

Short takes

Chips and Technologies, Inc. said it will shift its microprocessor development focus to concentrate on single-chip systems that integrate numerous functions, much like its own integrated PC/Chip. . . . Five computer companies allied last week to promote international standards for service and support information in distributed computing environments. The Distributed Support Information Standards Group includes **Bell Atlantic Business Systems Services, Inc., Hewlett-Packard Co., ICL PLC, Microsoft Corp.** and **Sun.** . . . **Lotus Development Corp.** signed a development agreement with **Digital Equipment Corp.** to develop Unix versions of its 1-2-3 and Ami Pro software for the Alpha workstation platform. Lotus will handle the development, and DEC will assist in marketing the software. . . . **Data General Corp.** will resell and support **Next, Inc.** workstations late this year. DG will position the Unix-based Next boxes as clients to its Aviion servers. . . . **Reply Corp.** is the first licensee of **IBM's** homegrown 386SLC chip. It was also first to buy IBM's 1M-byte single in-line multichip modules.

More news shorts on page 16

Blues aim to cut health care costs

IBM, ISSC, N.J. Blue Cross team up on information technology pact

BY NELL MARGOLIS
CW STAFF

NEWARK, N.J.— Blue Cross/Blue Shield of New Jersey, IBM and its outsourcing subsidiary, Integrated Systems Solutions Corp. (ISSC), last week inked a $52 million, five-year technology development pact aimed at establishing a new high-water mark in managed health care.

Together, the allies — including IBM specialty software development partner and alliance subcontractor Policy Management Systems Corp. — plan to provide extensive electronic links between health care providers, payers and patients.

Blue Cross Chief Information Officer Al Sturzione called the pact a cornucopia of goodies:

- For patients, it could mean a sweeping cut through red tape and quantum improvements in administrative service and medical care.
- It could also give New Jersey pioneer status in automated health care, which is widely viewed as an essential route out of today's high-cost, low-care bind [CW, Aug. 3].
- The deal would also give IBM and ISSC a showcase account in the coveted health care management niche. That is good news because ISSC has come under fire from rivals.

The alliance game plan, Sturzione said, is to mount six projects a year during the pact's five years. Each is to be fully implemented within 12 to 27 months. All 30 projects, he added, "are either in the final planning or execution stage right now."

Among the technology initiatives on tap are the following:

- An extensive Blue Choice and Provider database.
- An extensive claims network.
- Image-based electronic claims processing, mounted on imaging workstations and using high-speed scanners and optical jukeboxes.
- Sales automation.
- Extensive, integrated multiparty office and administrative automation.
- Automated enrollment, reporting and auditing.
- A system to allow users on-line access to enrollment data.

According to a panoply of experts, such technological advances, widely applied, could save approximately $30 billion in U.S. health care administrative costs.

The alliance, Sturzione said, will be administered by a series of committees, each composed of Blue Cross, IBM/ISSC and Policy Management Systems representatives. No employees will lose their jobs as a result of the deal, he said.

The idea for the alliance, according to Sturzione, grew out of an outsourcing investigation that stalled when "we realized we were already running too tight a shop for outsourcing to save us any money." When the negotiations derailed, Blue Cross and ISSC turned instead to talks of a partnership.

In January, Blue Cross/Blue Shield of Massachusetts signed a 10-year, $800 million outsourcing and development deal with Electronic Data Systems Corp. aimed at similar goals.

Rival challenges IBM outsourcing practices

BY MARK HALPER
CW STAFF

DALLAS — IBM is once again on the defensive over its outsourcing subsidiary, as a rival has rekindled 18-month-old charges regarding the unit's legality.

Affiliated Computer Systems, Inc., based here, contends that Integrated Systems Solutions Corp.'s (ISSC) outsourcing practices violate a 1956 consent decree that barred IBM from the computer services business unless it created a separate subsidiary.



Although IBM formed the ISSC subsidiary in May 1991, Darwin Deason, Affiliated's chairman, claimed the unit violates the spirit of the decree because the outsourcer uses IBM's sales force and name and receives special pricing on IBM equipment not offered to other outsourcers. IBM, moreover, continues to run outsourcing jobs obtained before it formed ISSC, which is a clear violation of the decree, he added.

In an Aug. 4 letter to IBM President John Akers, Charles Young, president of Affiliated's outsourcing subsidiary, noted that "a number of companies engaged in the service bureau business have questioned the legality and propriety" of IBM's outsourcing practices.

IBM did not respond to queries by press time.

IBM established ISSC following allegations by Affiliated and others that IBM was violating the decree, though IBM never conceded violations. At the time, IBM said it formed ISSC for business reasons.

Young's letter to Akers requests that IBM provide Affiliated and other outsourcers that use IBM equipment "with a complete inventory of all IBM data processing equipment that has been sold, leased or otherwise made available to ISSC, along with a statement of the prices, terms and conditions of the sale, lease or use of each such piece of equipment."

Young further states that the consent decree stipulates that IBM must provide that information on request. Young also asks IBM to notify Affiliated and others "of any data processing services provided by IBM to ISSC and the rates charged."

The consent decree issue remains an open file at the U.S. Department of Justice, which has received requests during the last year from industry association Information Technology Association of America (ITAA) and others to investigate ISSC.

Caught in the middle

The Department of Justice does not appear to be aggressively probing the matter, however. Last year, it asked the ITAA to send it more information, which an ITAA spokesman said the association did not do. ITAA walks a fine line between serving IBM and its other members. ITAA believes it is up to the Justice Department to determine whether IBM is violating the consent decree, the spokesman said.

Richard Irvine, the Justice Department attorney in charge of the matter, referred inquiries to a spokeswoman, who did not return phone calls.

"The Justice Department would sure serve the industry well if they would address the issue," noted Jim Mann, president of Sungard Data Systems, Inc., a Wayne, Pa.-based outsourcer and disaster recovery specialist. Rival outsourcers such as Sungard must balance concerns over the issue with their reliance on IBM for products.

HP Q3 may sag with economy

BY MARK HALPER
CW STAFF

PALO ALTO, Calif. — Hewlett-Packard Co.'s financial resilience showed signs of softening last week, as the company disclosed that earnings for the third quarter ending July 31 will come in below analysts' expectations.

HP attributed the slide to weakness in "parts of our computer systems business," which analysts said likely means the company's proprietary line of minicomputers, and in its test and measurement and analytical products businesses.

At midday Friday, the day after the disclosure, HP's stock was off $11, trading at around $60 a share.

The surprise announcement followed word earlier in the week that HP had reorganized its workstation and mini group. HP "moved around furniture" a spokesman said, though a few operations, such as customer service and workstations and servers, were elevated.

Slight increase

HP said earnings for the third quarter will register somewhere between flat and 15% higher than the 76 cents per share reported in the same period a year ago. Analyst estimates for the third quarter were in the $1.12 per share range.

"We're not immune to the economy," the HP spokesman said last week. "Maybe people thought we were."

HP's announcement follows a series of quarters in which HP has bucked computer industry trends by reporting robust growth. For the second quarter ending April 30, for instance, HP reported a 40% increase in net earnings and a 12% increase in sales.

Robert Herwick, an analyst at Hambrecht & Quist, Inc. in San Francisco, said HP told him that third-quarter orders for all products were up between 10% and 12%, compared with a weak third quarter last year.

Order figures are expected to translate into similar revenue performance when HP reports its numbers Aug. 18. Herwick anticipated sales would be down between $200 million and $300 million from the $3.9 billion he had projected.

Meanwhile, in the reorganization of its Computer Systems Organization (CSO), HP disbanded its Network Systems Group and broke out that group's constituent operations into stand-alone units reporting directly to Wim Roelandts. Roelandts will take over the CSO as general manager once Lew Platt, who is executive vice president of CSO, succeeds John Young as president in November.

New units include the Workstation Systems Group, headed by Gary Eichhorn, and the Systems and Servers Group, headed by Rich Sevcik. In his new post, Sevcik, who had run HP's proprietary mini operations, picks up responsibility for the HP 9000 Unix minis.

Bernard Guidon, who had run the HP 9000 operations, will become CSO's European marketing manager.

With the reorganization, HP also moved worldwide customer support operations out of the CSO and elevated the unit to report directly to Young.

Vendors hungry for Intel chip

BY MICHAEL FITZGERALD
CW STAFF

SANTA CLARA, Calif. — Though two weeks ago it delayed a next-generation microprocessor while it fired up its stove, Intel Corp. this week will start popping the DX2 66, currently its most powerful microprocessor, out of the oven.

Most users contacted, however, shrugged their shoulders at the incremental power increase, just as they did at the delay of Intel's next-generation chip, the P5 [CW, July 27].

"There are always situations where you need whatever power you can get, but it will definitely fill a relatively small niche here," said Roger Bender, a former president of the Microcomputer Managers Association, Inc.

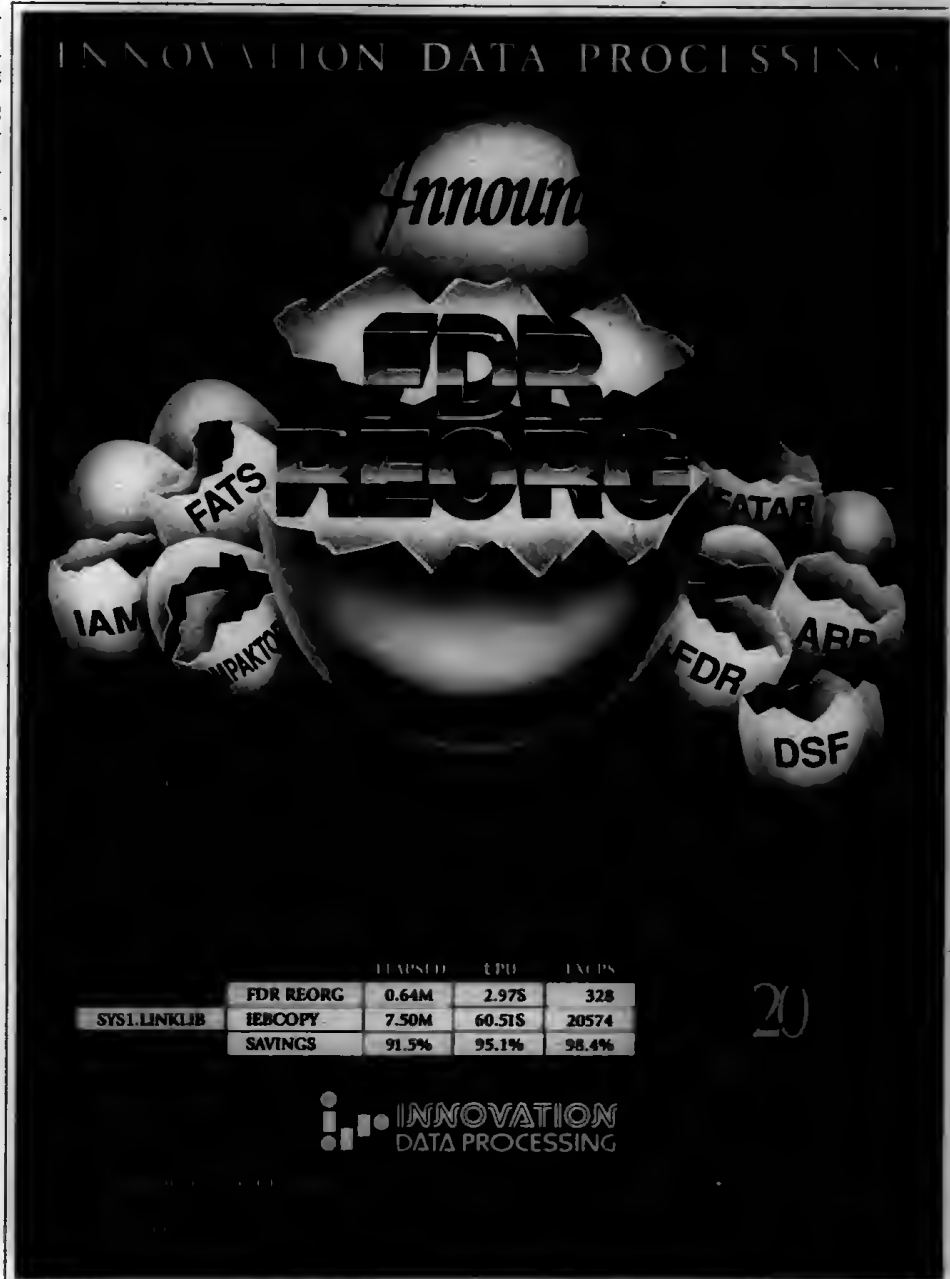
Still, the arrival of the 33-MHz/66-MHz DX2 chip was greeted by hordes of hungry vendors, led by IBM, Compaq Computer Corp., AST Research, Inc. and Dell Computer Corp.

Intel said it already has 20,000 orders for the chip, which reportedly will offer a performance increase of about 30% over the 50-MHz 486DX and 70% over the 33-MHz 486DX. Those orders are double the number Intel had in hand when it released the 50-MHz DX2 earlier this year.

IBM plans to put the new processor in upgrade cards for its Personal System/2 Models 90 and 95, and Compaq plans to announce new systems based on it — the DeskPro 66M and DeskPro 4/66I — as well as upgrade cards for current M and I series users. Base pricing for a diskless DeskPro 4/66I will be $2,749.

Compaq also plans to offer upgrade boards for the SystemPro and SystemPro/LT server families. Dell, meanwhile, plans to offer four new systems starting with the 486P/66 ($2,499), which includes a 120M-byte drive.

While Intel said the new DX2 would remedy the difficulty of designing systems around its 50-MHz 486DX, analysts pointed to the need to battle competitors for its introduction.



Users yawn over IBM's networking scheme

BY JOANIE M. WEXLER
CW STAFF

NEW YORK — IBM last week attempted to heat up the as-yet lukewarm reaction to its networking blueprint for the peaceful coexistence of applications written to different network interfaces in a press briefing here.

However, some observers remained adamant that the crux of the blueprint, IBM's still-developing Common Transport Semantics (CTS) software, will benefit IBM developers more than users.

CTS, which was announced in March, allows applications written to different interfaces to coexist but does not help programmers develop new business applications because they still have to learn a multiplicity of higher level application programming interfaces (API), said Robin Layland, an engineering consultant at The Travelers Corp. in Hartford, Conn.

Layland and others cite emerging, higher layer "middleware" interfaces from other vendors as more useful to in-house developers.

CTS allows users to retain their existing applications but mix and match the underlying networking protocols among Systems Network Architecture (SNA)/Advanced Peer-to-Peer Networking, Transmission Control Protocol/Internet Protocol (TCP/IP) and Open Systems Interconnect (OSI).

For example, "Users can bring in TCP/IP applications without uprooting their existing SNA applications," said Frank Dzubeck, president of Communications Network Architects, Inc. in Washington, D.C.

The software is similar to a multiprotocol router because it combines multiple protocols on one network but does not assist in the issue of different protocols intercommunicating.

CTS has been stamped with no official delivery date, though IBM executives and analysts said it will be delivered "shortly."

"I don't have a high opinion of the blueprint because I don't see this solving a user problem," Layland said. He explained that most users have become accustomed to supporting multiple protocols. Rather, he said, "I have corporate programmers writing Cobol programs. When you present them with [multiple APIs], it gets too complicated."

"This is nice for IBM," he added. "If they write a file-transfer program and they don't know what protocol you're going to run it over, they can just write to that common layer, which makes their development easier." Layland said CTS does not address applications talking to applications, however, "and that's where middleware comes in."

To date, IBM has not announced any work with a "middleware" offering to reduce the number of verbs a developer would have to know to program to a variety of interfaces. Firms offering insulating middleware include Horizon Strategies, Inc. in Needham, Mass., and Peer Logic, Inc. in San Francisco.

A 'nice' start

While observers said they feel IBM could do more for users in this area, they do not deny that what IBM is doing is "nice."

Nomura Research Institute America, Inc. in Staten Island, N.Y., for example, is benefiting from IBM's efforts to create a level playing field for supporting different applications.

Lionel Geltman, assistant vice president of technical services at Nomura, said he has worked with IBM for two years to get TCP/IP-to-CICS connectivity in place for joining front- and back-office data "to let traders know where they stand" and to insulate developers in each camp from having to learn new APIs to blend the environments.

He acknowledged that products from Horizon Strategies and Peer Logic would "certainly be good, competitive alternatives," but he explained that when his connectivity issue arose two years ago, those products were not available.

Judge sides with Lotus on suit

Borland Chief Philippe Kahn calls judgment a 'nonevent'; will appeal

BY CHRISTOPHER LINDQUIST
CW STAFF

BOSTON, Mass. — Borland International, Inc. last week began voluntarily removing from dealer shelves versions of Quattro Pro that offer the Lotus Development Corp. menuing system, following a court ruling that the product infringes on the look and feel of Lotus 1-2-3.



John Owens

"WE'VE SAID IT was theft all along."

JIM MANZI
LOTUS

A Lotus menu-less version of the spreadsheet was available as of last Monday, according to the company. Borland said the Lotus menus would be made available to users requesting them "for a nominal fee."

Borland may also find itself taking a trip to the bank if a jury trial still pending awards Lotus damages, which some observers predicted could run into millions of dollars. The actual effect on Borland customers is expected to be minimal.

Despite a negative judgment by U.S. District Judge Robert Keeton, Borland claimed it will eventually prevail in the legal battle. Lotus sued Borland for copyright infringement in 1990 shortly after Borland filed a suit in California requesting that the court declare Quattro Pro to be noninfringing on 1-2-3. A battle for jurisdiction ensued; Lotus won.

Judge Keeton's ruling "flies in the face of copyright law and will be reversed on appeal," claimed Philippe Kahn, Borland founder and chairman.

Lotus apparently felt otherwise. "We are obviously thrilled with this," said Lotus Chief Executive Officer Jim Manzi. "We've said it was theft all along."

Observers indicated that the decision is not likely to have any major impact on software copyright law as a whole. The effect of the judgment will probably be "very limited to this case," said Lee T. Gesmer, a partner at Lucash, Gesmer & Updegrove in Boston.

However, the effect on Borland could be dramatic in a monetary way, despite Kahn's assertion that the judgment is a "nonevent."

"It will hit Borland hard when Lotus starts throwing around damage numbers," Gesmer said. Such numbers could be in the tens of millions of dollars, he estimated.

Lotus cannot count its winnings yet, however. While Judge Keeton, who has presided over all of Lotus' previous copyright violation cases, did hold that Borland had infringed on Lotus' copyright, Borland will appeal his ruling. Keeton also called for a jury trial to determine some remaining questions, such as the extent of the infringement.

"I conclude that a jury trial is essential before final disposition of this case," Keeton wrote in his judgment. A tentative trial date of Nov. 2 has been set.

Some users said they believe Borland will remain standing, whatever the outcome. "Borland is a very smart company," said George Roukas, systems director at a Fortune 500 financial services company. Kahn "will make a payment, and it will hurt for one year, and he'll move on and cream Lotus in another way." However, damages would only exacerbate the pain of Borland's recent less-than-stellar financial performance.



THE RULING "will be reversed on appeal."

PHILIPPE KAHN
BORLAND

Other users are taking a wait-and-see attitude. Sheldon Laube, national director of information technology at Price Waterhouse, which recently inked a 25,000-workstation software licensing deal with Borland, said he was unconcerned with the judgment — for the moment. "When it affects our business relationship, that's when I'll be concerned," he said. "That's not the case right now."

Lotus' financial benefit may be a one-shot affair as well. Recent reports indicated that applications are moving to graphical interfaces and common user interface standards. If the trend continues, copyrighted interfaces will fade in importance.

Users do not have to worry about at least one issue: that Lotus may request a recall of already-sold packages of Quattro Pro. A Lotus spokesman said Lotus has no plans to request such a recall.

Senior editor Rosemary Hamilton contributed to this story.

Legal jousting

Lotus has waited two years to get a partial judgment on its copyright infringement suit against Borland

July 1990
Lotus files suit against Borland, alleging that Quattro Pro infringes on 1-2-3's look and feel.

March 1991
Judge Robert Keeton rejects Borland's request for a one-year discovery period.

May 1991
Lotus requests a summary judgment stating that 1-2-3 is copyrightable and Borland copied elements of it.

March 1992
Summary judgment motions from both parties denied.

July 31, 1992
Judge Keeton orders partial summary judgment against Borland, stating that it had infringed Lotus' copyright of 1-2-3.

CW Chart: Michael Suggen

IBM blueprint encircles key protocols

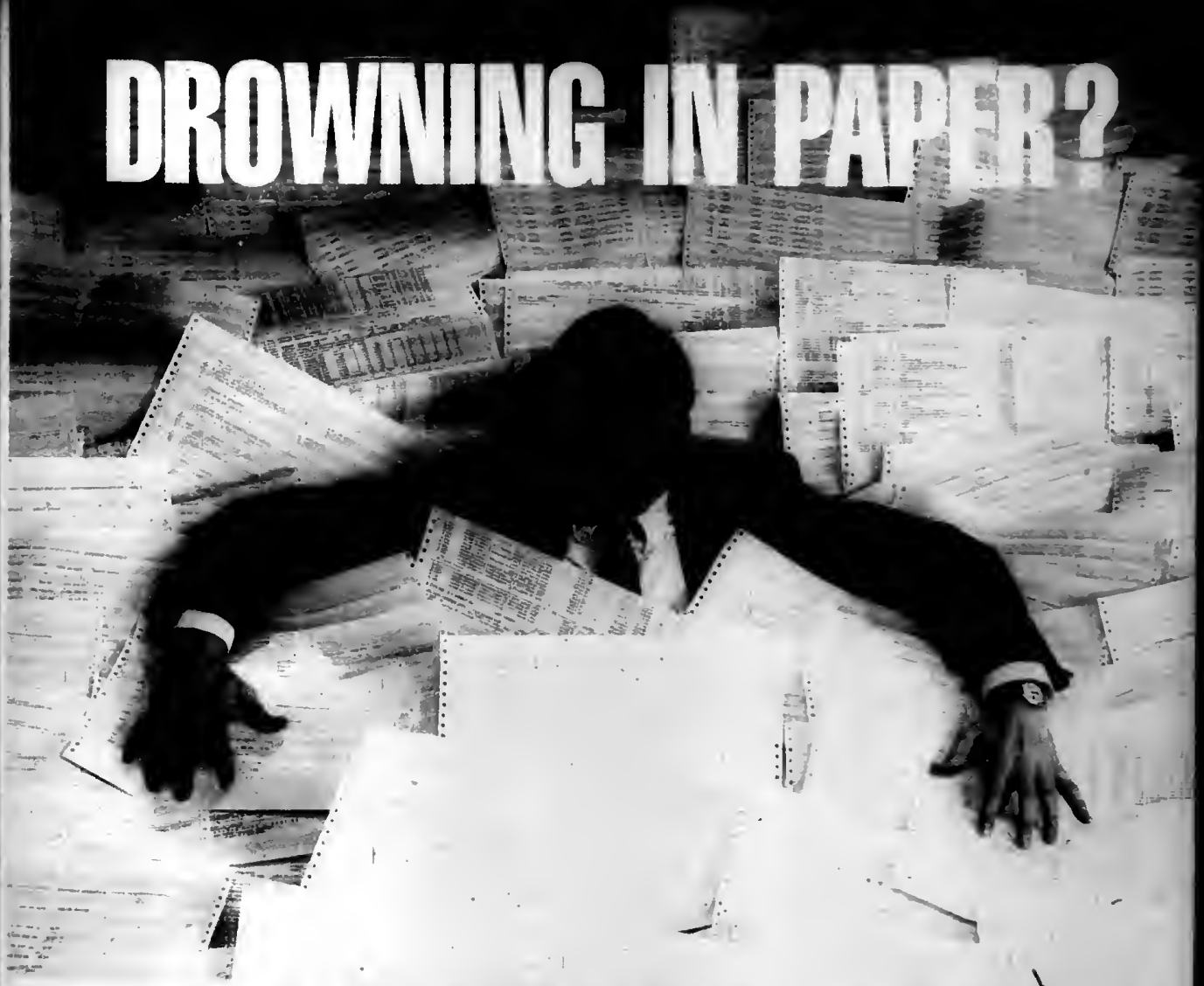
With its networking blueprint, IBM is "positioning SNA, TCP/IP and OSI as peers," said Dorene Palermo, IBM's networking systems director. She explained, however, that IBM has beefed up its investment in TCP/IP so that it now accounts for the largest piece of its networking software investment pie.

Nonetheless, "rumors that IBM is backing away from OSI are untrue," she said. "We've just adjusted our delivery" to match the respective purchasing rates of TCP/IP and OSI products.

To help spur OSI, IBM will roll out an as-yet unannounced service next year where IBM personnel will install OSI products on IBM mainframes "and demonstrate that they unequivocably interoperate with other vendors' systems," said Peter Crotty, OSI product administrator. He explained that OSI installation snafus have been giving OSI a bad rap.

JOANIE M. WEXLER

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IS cover-up charged in system kill

CONTINUED FROM PAGE 1

tabase, decision support and integration technologies.

The three partners declined to comment on the issue of the cover-up and the disposition of Intrico's assets.

At issue is the disbursement of funds and assets, including millions of lines of decision support, database software and application software code and some $125 million that the four companies invested over 3½ years, according to Intrico's sole remaining executive, Vice President of Finance David Mellinger.

Confirm, which was to draw on yield management software from another subsidiary of parent AMR Corp., was to have been a leading-edge comprehensive travel industry reservation program combining airline, rental car and hotel information. As partners, Hilton, Budget and Marriott had lined up as the first three customers, and Intrico had grand plans to market the service to others.

Major problems surfaced when Hilton came on-line last April as Confirm's first beta-test user. Intrico then announced an 18-month delay, culminating in the recent decision to cancel the project altogether [CW, Aug. 3]. Unbeknownst to its partners, the project allegedly had problems that had been festering for months.

In a letter dated May 1 and sent to employees of American Airlines' IS division regarding "our Confirm [system] problem," Hopper noted: "Some people who have been part of Confirm RS management did not disclose the true status of the project in a timely manner. This has created more difficult problems — of both business ethics and finance — than would have existed if those people had come forward with accurate information. Honesty is an imperative in our business — it is an ethical and technical imperative."

An AMR spokeswoman last week said Hopper was unavailable for comment. She said AMR is investigating whether managers did conceal information.

Hopper, who runs American's Sabre reservation system and other American information systems, had been dispatched as a troubleshooter to sister company AMR Information Services after problems surfaced at Hilton in April. The problems Hopper encountered included one widely reported difficulty integrating Confirm's Transaction Processing Facility reservation system with MVS and DB2-based decision support systems containing customer information.

Confirm was also crippled by an underlying flaw in AMR Information Services' decision support system, alleged Charles Biebighauser, who until two weeks ago was Intrico's vice president of operations. He left about the same time as Intrico President Gordon Stevenson.

Because of an AMR Information Services design error, Confirm's DB2 database was virtually unrecoverable in the event of a crash, Biebighauser claimed. That was because in the development of the DB2-based decision support system, the company mistakenly implemented a version of Texas Instruments, Inc.'s Information Engineering Facility (IEF) computer-aided software engineering tool in which IEF generates its own database structure, Biebighauser said.

For a system the size of Confirm, AMR Information Services should have implemented a version of IEF in which the structure is dictated, he said. "The system was so big that what IEF generated would have been impossible to maintain."

It also failed to complete several applications, including a rates program, Biebighauser claimed. "The fundamental issue is, [AMR Information Services] didn't deliver," he said.

After Hopper surveyed the technology disaster scene, AMR Corp. replaced 22 AMR Information Services employees, firing eight, according to Biebighauser. A crew from Hopper's Sabre operation was named to help salvage the project.

Among the AMR Information Services workers who left about that time was John Mott, who was president of its Travel Services Division, the operation overseeing Confirm development, according to the AMR spokeswoman.

Doors open

The collapse of the Intrico reservation consortium opens opportunities to outsourcing and integration companies seeking a piece of travel industry action.

Intrico members Hilton, Budget and Marriott had planned to cut over to Confirm, Intrico's aborted cross-industry reservation system. Now they must reconsider.

Hilton and Budget already use Confirm's developer, AMR Information Services, as a systems manager for their North reservation system. The two firms are part of a joint entity called Compass, but it is not clear if they will stay with AMR Information Services. Both declined to comment last week. Marriott also was not talking, except to say that it is continuing to enhance its own Marsha reservation system.

MARK HALPER



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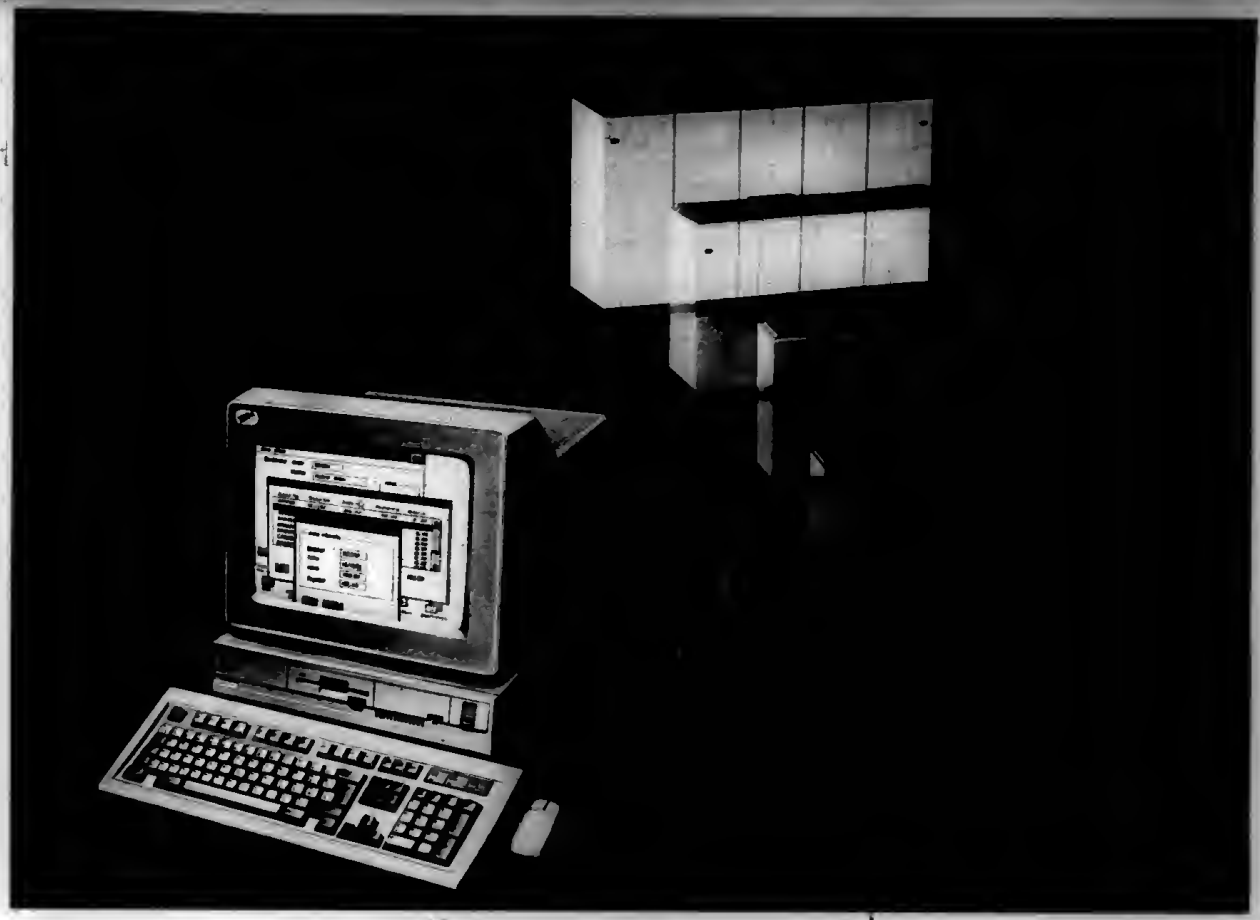
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GSA Contract Number GS00K90AGS5251-PS02

Apple confident in war with Windows PCs

Wielding price cuts and applications, company looks to bring its multimedia experience to bear

BY MICHAEL FITZGERALD and JAMES DALY
CW STAFF

BOSTON — In the face of a furious charge by personal computer makers touting the ease-of-use capabilities of Microsoft Corp.'s Windows, an Apple Computer, Inc. executive last week said the company is better prepared to handle the jousting than ever before.

For starters, Apple has adopted the same armor as its competitors — price cuts and a new low-cost line of PCs (see story page 30). It will also attempt to leverage applications such as QuickTime and its general multimedia experience to give it a leg up on DOS vendors trying to use multimedia to sell more machines.

"People think just because Microsoft is doing well, they're kicking the hell out of us, and it's just not true — our performance has improved since the introduction of Windows," Ian Diery, Apple's recently appointed executive vice president of sales and marketing, told a select group of reporters last week. "It is an environment we have to compete with, yes, but we think that if you want innovation, you can't buy Windows — you have to buy the Macintosh."

Diery said products such as QuickTime, a multimedia platform and other advanced multimedia products will give users capabilities they will not gain in the Windows environment for up to 18 months — until Windows New Technology becomes more stable.

Still, data from one market research firm suggested Apple is slipping from its role as the dominant graphical user interface (GUI) platform.

Computer Intelligence's monthly survey of corporate sites showed more sites buying Windows (15%) than Macintoshes (14%) in May, the first time that has happened. The numbers for June showed that 18% of the sites surveyed purchased Windows, compared with 14% that bought Macintoshes.

"Many people are starting to make a comparison [between Windows and the Macintosh] and leaving Apple out of the equation," said Dan Ness Jr., an analyst at La Jolla, Calif.-based Computer Intelligence. Ness said Apple's PowerBook and last week's price cuts were both solid responses to the new competition.

Diery acknowledged that Apple could no longer charge its traditional premium, saying, "We can maintain a premium on price, but we can't be exorbitantly more expensive than the clone market anymore."

Many Macintosh users contacted last week said that despite the savage price wars in the IBM-compatible realm, which are making PCs with GUIs cheap, they had little reason to leave the Macintosh.

"The price of the Mac has dropped pretty significantly over the past year, and I think they are pretty close [to IBM PC clones] in terms of price and performance," said Barry Eisenberg, a computer specialist at Hughes Aircraft Co.'s Ground Systems Group in Fullerton, Calif.

Two at a time

Ben Berry, manager of computer services at Hughes, added, "We've standardized on both the Mac and PCs" and have no intention of moving off one platform in favor of the other.

Several users agreed with Rick Marolt, information systems manager at Great Central Insurance Co. in Peoria, Ill., who said, "Our PC purchase decisions are made independent of price; they're based on the planned use of the equipment." These users said the Macintosh continues to serve functions that PCs cannot, particularly in the desktop publishing realm.

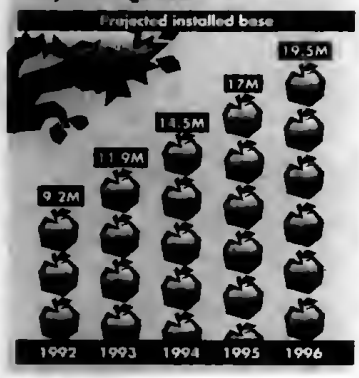
Still, Diane Coleman, manager of marketing systems at Fleetguard, Inc. in Nashville, has some Macintoshes installed but has stopped buying more. "It's primarily functionality that drives our purchasing decisions, and the Mac doesn't offer what we can get on any of the clones for the same price," she said.

Ness said that in the long term, Apple must shore up its relationships with software developers to prevent an exodus to Windows-based products.

"If you look at the titles, the Mac seems to have slipped behind in software development schedules, while Windows products have been pushed ahead," Ness said.

Growing the orchard

The installed base of the Apple Macintosh is expected to achieve a compound annual growth rate of 20% through 1996



Source: International Data Corp. CW Chart: Stephanie Faucher

Third parties target PowerBook

BY MICHAEL FITZGERALD
CW STAFF

BOSTON — The converted heard their sermon and left all the happier for it at the three-day revival meeting known as MacWorld Exposition, held here last week.

Macaholics in attendance came for the latest products, and third-party vendors obliged — many pursuing the peripherals market for Apple Computer, Inc.'s new PowerBook portable personal computers.

For instance, Applied Engineering, a Dallas-based division of AE Research Corp., released CommPort, a data modem with 14.4K bit/sec. data transmission rates. This is scheduled to ship before the end of the year, and it will give PowerBook users the ability to do cellular and other wireless communications.

Another company, Newer Technology in Wichita, Kan., released ColorBook, a screen upgrade that turns PowerBook Models 140 and 170 into an active-matrix color portable. While pricey ($5,295 for the screen and 6M bytes of random-access memory), it drew attention at the show.

"It is expensive, but the PowerBook is my main computer, and I'm looking to do animation and presentations so I'm interested in it," said Thomas J. Kinstler, manager of technical services at Metalplate Galvanizing, Inc. in Birmingham, Ala.

MACWORLD EXPOSITION

Apple released the PowerBook 145, a souped-up replacement for its PowerBook 140. The 145 contains a 25-MHz 68030 processor from Motorola, Inc., up from the 16-MHz processor that the 140 had. At a base price of $2,399, it costs less than the 140.

Enterprise-oriented products were also announced.

- **Radius, Inc.**, a San Jose, Calif.-based company, released RocketShare, a multiprocessing extension to Apple's System 7.0. The extension will cost $499 and is slated to ship this month.
- **Cayman Systems, Inc.** released GatorLink, a dedicated remote-access server. The Cambridge, Mass.-based company will begin shipping systems next month for $1,899.
- **Lotus Development Corp.** demonstrated Notes for Macintosh, which is scheduled to ship in the fourth quarter.
- **Echo Logic**, a spin-off from AT&T's Bell Laboratories, demonstrated its product for the first time. The product, called FlashPort, allows Macintosh software to run on a RISC System/6000-based system. Echo Logic is working with software developers to license its product.
- **La Cie Ltd.**, a division of Quantum Corp., released Version 5.4 of Silverlining, a software package for Small Computer Systems Interface management and disk formatting.
- **Computer Associates International, Inc.** released an updated version of Cricket Draw.
- **DayStar Digital**, a Flowery Branch, Ga.-based maker of Macintosh accelerators, announced TurboStar, a 68040 accelerator that is scheduled to ship in November.

Singer punctuates end of Apple keynote address

▶Even as a $7 billion corporate animal, **Apple** can still pull heart strings. The music that introduced and closed Apple Senior Vice President Fred Forsyth's keynote address at MacWorld was written, on a Macintosh, by Johnnie J. Wilder Jr. Wilder, the lead singer for 1970s/1980s Top 40 group Heat Wave, was rendered a quadriplegic after a car accident. At the end of Forsyth's address, Wilder came rolling out on stage to show how he uses the Macintosh to write music, using a special device that attaches to his head. Wilder, accompanied by a Macintosh, sang the Heat Wave hit "Always and Forever," moving the crowd to give him a lengthy standing ovation.



▶The biggest draw on the show floor was not products at all, but **Ben & Jerry's Homemade** ice cream. No less than half a dozen vendors gave away Peace Pops to those who endured a product demo, and they had more demand than they could handle. Other freebies came from **Central Point Software**, which gave prizes to anyone who would roll a pair of oversized dice. Lucky seven earned you a free copy of MacTools.

▶**Maxa Corp.**, maker of Snooper, a virus protection product, outfitted its booth staffers like doctors (they handed out tongue depressors). Its booth featured a "MacPatient," a sheet-covered mannequin in a hospital bed that had a Mac Classic for a head. The patient had an ice bag on its head, an IV in its serial port and a truly sick "expression" on its monitor.

▶For a panel on Unix where **Apple** and **Sun Microsystems** officials battled to see who could give the most effective sales pitch, the Sun people wore suits and ties, while the Apple-ites dressed down. Still, one show attendee was overheard lamenting, "You actually see suits and ties here now."

▶While **Berkeley Systems** had its Flying Toasters out in force, **Baseline Software** had the most paraphernalia. Besides a man in a moose suit who walked around distributing brochures, it gave out pins with sayings such as "I Like Icon."

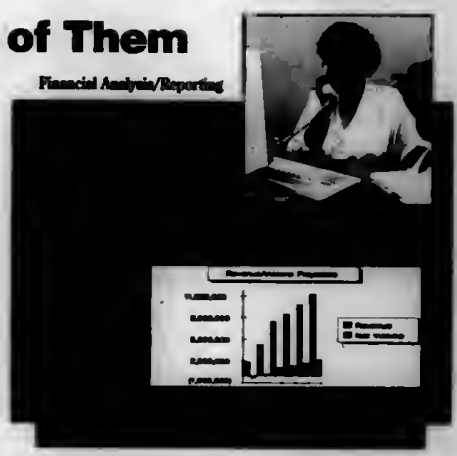
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Data Visualization



Borland sets delivery for Object Exchange

▶**Borland** is scheduled to ship Object Exchange, the key piece of its workgroup strategy, sometime in the first half of 1993. Object Exchange was announced as an architecture earlier this year, and the company has been skimpy with details since then. Chairman Philippe Kahn said at last week's Groupware '92 conference that the software will work with Borland applications, as well as with other vendors' software. He added that it will operate as an intelligent agent guiding the workgroup process. He did not elaborate, however.

▶Although it announced a megadeal last month for a suite of Borland applications, **Price Waterhouse** has no plans to cut back its Lotus commitments. The company plans to increase the number of Notes users to 20,000. About 13,000 of Price Waterhouse's employees use the software today.

▶Not exactly best friends: Following his keynote address, Jim Manzi, chairman of **Lotus**, had a run-in with Stewart Alsop, who wears three caps as editor-in-chief of *Infoworld*, publisher of the "PC Letter" newsletter and sponsor of the Demo conference.



He is also not likely one of Manzi's favorite people (Alsop published an open letter to Manzi late last year requesting that the chief executive officer resign). During a brief question and answer session, Alsop asked Manzi if Notes is a closed or open system, and Manzi naturally talked up its openness with such points as the number of different operating environments it supports. Dissatisfied, Alsop then asked for a vote from the audience to determine how many people thought Notes was open vs. how many people thought it was closed, a point often pressed by Lotus groupware rivals Borland and **Microsoft**. Alsop then pointed out to Manzi that more people perceived it as closed.

▶In kicking off a special Notes user group meeting at the conference, Kevin Brown, who runs the Boston Notes User Group, said there may soon be a National Notes User Group established.

▶David Stone, a **DEC** vice president, said companies need to give users a little slack in experimenting with workgroup technology so they can become comfortable using it. As an example, DEC is currently supporting 7,000 active electronic conferences over its electronic-mail and VAXnotes network. Fully one-third are personal conferences that discuss everything from basketball to movies to how to buy a car. "It shows people like to use this mechanism," Stone said.

▶Carl Di Pietro, a former vice president of human resources at **Marriott** and now an independent consultant, managed an electronic decision center during the last nine months for the hotel chain. The center, equipped with standard personal computers and VisionQuest group decision software from Collaborative Technologies Corp., allows meeting participants to present ideas anonymously. Di Pietro, who studied the 300 meetings that took place at the center, claimed it helps people respond truthfully rather than tell their meeting leader (typically a boss) what he wants to hear. What is more, the average meeting was completed in one-tenth of the time it would normally have taken.

▶Insider politics: A scheduled highlight of the conference was a debate between John Landry, Lotus' chief technology officer, and Richard Schwartz, Landry's counterpart at Borland, for the two to challenge each other's approach to groupware architectures. As the hour approached, Esther Dyson, editor and publisher of the "Release 1.0" newsletter and debate moderator, decided the session was billed as too controversial. Ray Ozzie, president of Iris Associates and creator of Notes, was called on to fill in for Landry. Ozzie and Schwartz were quite polite.

Sun enters groupware market

BY MARYFRAN JOHNSON
CW STAFF

MOUNTAIN VIEW, Calif. — A Sun Microsystems, Inc. subsidiary unveiled its first product for the emerging groupware market last week but snubbed the Groupware '92 conference as an inappropriate coming-out party.

"We are focusing in the groupware arena, but [ShowMe] is more for desktop conferencing," said Byron Ryono, director of SunSolutions, a newly formed development group within Sun Technology Enterprises.

Attending a meeting without moving from a SPARCstation is the aim of ShowMe, which allows Sun users to view documents, graphics and other images displayed simultaneously on their workstation screens.

At $349 for a single-user floating network license, ShowMe runs under Solaris 1.0 and OpenWindows Version 3 and requires a Transmission Control Protocol/Internet Protocol-based local-area network.

Still a ways to go

"This is the beginnings of groupware for Sun, and it's a nice package as far as it goes," said Rikki Kirzner, an analyst at Dataquest, Inc. in San Jose, Calif. "But it doesn't go far enough."

With ShowMe, only one user can change the document being viewed by the group, Kirzner noted. "There's a lot of groupware that is more sophisticated than this product," she said.

"Groupware is one of the hottest new fields in which computing technology can help us," noted Nancy Karen, corporate director of strategic information management at Nynex Corp. in White Plains, N.Y., one of Sun's large customers. Although she was unfamiliar with ShowMe, Karen said Nynex is already deploying and developing its own internal groupware applications.

Teamwork key to workgroup success

CONTINUED FROM PAGE 1

nologies at Price Waterhouse, a Notes showcase account, said the initial installation "wasn't about technology" but was aimed at solving a core business problem. Price Waterhouse was in search of a way to improve communication among staff members.

The idea was to pool expertise so that staffers would not be presenting ideas already hatched in other parts of the organization.

David Daniels, a senior planning consultant at Metropolitan Life Insurance Co., said one of the company's first Lotus Notes installations also resulted from fixing a specific business problem. In this case, the company's publication group needed a better system to prepare documents as well as a method to store and retrieve research.



Yvonne Hennessy/Gamma-Liaison

Chase Manhattan's *Elaine Bond: Workgroup computing is a 'big-time change'*

Solving problems

"We could have made a management decision to just organize it better," Daniels said. Instead, the group installed Notes for writing, editing and storing documents. "This was a case of solving a real problem. And the benefit with starting with a well-defined need is you can justify the investment."

Meanwhile, Bechtel Corp. in San Francisco installed VAXnotes, a Digital Equipment Corp. mail and conferencing product, about a year ago in its IS department.

"For a while, no one was using it," noted William Ramage, a systems architect in the automation integration method group.

It was not until the company held workshops to outline the ways in which VAXnotes could help users and to "ask for commitments" that the system began to be used.

Reward offered

Once a workgroup project is under way, managers need to support it with a reward system geared to teams, executives said. This is particularly difficult for companies that promote individual achievements and where status is based on an individual's knowledge.

"It's hard for people to feel good about sharing information if for so long people have been rewarded when they are the only ones with the information," David Stone, corporate vice president of international engineering and strategic resources at DEC, said in a speech at the groupware conference.

Daniels said he suspects IS will have to become more schooled in the people issues to make workgroup technology more successful.

"What we are dealing with here is far-reaching, and a lot of it is communications — the way people think and the way they work," Daniels said. "A lot of people [at Groupware '92] are really groping [around] with this. It's a lot, particularly for technologists who are not necessarily experts in this field."

Aldus cuts work force

SEATTLE — Lean economic times drew blood at yet another company last week as Aldus Corp. announced a restructuring and layoff.

The graphics software developer is reducing its U.S. work force by about 11%, or 101 people, effective Aug. 7. The layoffs will affect the company's headquarters, the consumer division in San Diego, a development center in Dallas and the company's regional sales offices. A company spokesman said that although the restructuring will also entail some internal reorganization and shifts of responsibilities, the main focus is the layoffs.

Aldus President Paul Brainerd said the move was in response to poor economic conditions, both internationally and domestically. The layoffs also reflect increasing competitive pressure within the graphics software field, he said. That arena has grown almost to the saturation point as vendors vie to jump onto the graphical interface bandwagon.

Aldus, which produces PageMaker, its flagship product, posted a loss of $899,000 on net revenue of about $38 million for the quarter ended June 30.

CORRECTIONS

In an article about the Open Software Foundation [CW, July 27], analyst Paul McGuckin's employer was erroneously reported as Dataquest, Inc. McGuckin is the program director for mid-range computing strategies at Gartner Group, Inc.

.....

In the July 27 issue, a chart on page 97 incorrectly reported Software Publishing Corp.'s profit. The company earned $679,000 in the second quarter.

Host makers: Let's make a deal

CONTINUED FROM PAGE 1

cluded in the deal, how much money the customer has spent with the vendor in the past year and the importance of the account to the vendor. The grocery executive said other users told him of hard-dollar discounts ranging up to 35% off mainframe list prices.

Paul Maszszak, director of data processing operations at C. R. Bard, Inc. in Murray Hill, N.J., confirmed that he has seen total discounts of 40% to 50%, adding that "sometimes you can even do better. It's a buyer's market, better than anything I've seen before. Everything is negotiable."

Doug Underhill, vice president at CSX Technology in Jacksonville, Fla., said, "It does raise the question of whether the prices were too high to begin with."

> "NO MATTER WHAT KIND of a great deal you get, you always walk away feeling like you've left money on the table. It's the good old American way."
>
> DAVID MOORE
> MELLON BANK

Techniques that some customers use include playing the three mainframe vendors against one another. In these hard-pressed economic times, that threat is often enough to get some good deals.

Jim Cassell, an analyst at Gartner Group, Inc. in Stamford, Conn., said, "We've never seen more of a supply/demand imbalance. For the first time I can remember, all three mainframe vendors are offering the latest and greatest mainframe technology. Competition is fierce, and customers are still managing information technology budgets conservatively as we slowly come out of the recession."

Furthermore, Cassell said, the pressure is on to sell during the summer so the vendors can record the completed transaction by the end of the fiscal year.

Some of the mainframe makers disputed these accounts. Art Cohen, director of business practices management at IBM, said, "To my knowledge, we're not discounting any differently this year than we did last year." He said IBM's practice of providing volume discounts based on total dollar amounts still holds.

An HDS spokesman said, "Discount is a relative term." He agreed that although discounts are in the 40% range, last year's discounts were even higher — in the 60% range.

"It's still higher than we'd like to see, but it's not as high as last year's record," he said.

Robert Djurdjevic, president of Annex Research in Phoenix, said that although deep discounting is occurring, "it is not to the extent that some customers are claiming. To some degree it is earning stripes with their management. It's useful to show to the bosses that they're beating up on IBM."

He likened the situation to what occurred in 1989, another year when discounting was said to be high. "By the time the year was finished, IBM showed double-digit growth in both revenue and profits. You cannot have it both ways, with the vendors making money and also providing deep discounts. There's a lot of haze out there in the marketplace, and in such an environment, there are a lot of truths and half-truths," Djurdjevic said.

Regardless of whether this year holds the all-time record, just about everyone agreed that users will retain the upper hand for the indefinite future. "I don't think there's any going back," said David Moore, senior vice president at Mellon Bank Corp. in Pittsburgh.

"The mind-set is different from what I've seen before," he said. "It's like going to a used car lot. No matter what kind of a great deal you get, you always walk away feeling like you've left money on the table. It's the good old American way."

Firms announce local-bus pact

Micronics Computers, Inc. and Gateway 2000 hailed a local bus last week, as the pair announced joint development of a line of personal computers featuring advanced local-bus architecture.

Designed to comply with VL-Bus, the local-bus standard backed by the Video Electronics Standards Association, the Intel Corp. I486-based machines will offer extremely high-performance video and peripheral I/O based on the local bus, the companies claimed.

Gateway 2000 President Ted Waitt pointed out that the local-bus design is 4 to 10 times faster than Extended Industry Standard Architecture (EISA) or XT/AT bus design.

Local-bus architectures speed processing by providing a direct 32-bit link of the CPU to local-bus slots or on-board devices. This allows the bus to operate at the same speed as the system's CPU, which eliminates the bottleneck effect that XT/AT, EISA and Micro Channel Architecture bus architectures have.

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TA/DL	Terminal Adapter	1 Ch. @ 64K 1 Ch. @ 16K	ISDN	X.25 PAD, Soft Upgrade
TA220	Terminal Adapter	2 Ch. @ 64K 1 Ch. @ 16K	ISDN	Combines "B" Channels
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NEWS SHORTS

AT&T revamps leased-line pricing

AT&T last week filed revisions for simplified Tariff 9 (leased-line) service pricing that will generally increase short-haul rates — including T3 service — while decreasing long-haul rates. Depending on how the mix of services washes for a given customer, this "could result in whopping increases in leased-line costs" to users, said Frank Daubeck, president of Communications Network Architects, Inc., a Washington, D.C.-based consultancy. The prices will better align the network services with their underlying costs, AT&T claimed.

Motorola unit wins test license

Iridium, Inc., a Motorola, Inc. affiliate, received an experimental license from the Federal Communications Commission to launch and test five satellites deployed in polar orbits approximately 420 nautical miles above Earth. Iridium had proposed an integrated satellite and terrestrial wireless communications system featuring voice, data, fax and radio-determination satellite services. Launches of the experimental satellites are planned for 1996.

DEC leads mail-order pack

Digital Equipment Corp. now ranks ahead of Dell Computer Corp. and IBM in direct mail sales, according to *Direct Marketing* magazine's annual list of the "Mail Order Top 250." DEC's direct mail sales increased to $1 billion in 1991, pushing the company to No. 16, up from No. 36 the previous year. IBM, with $900 million in mail-order revenue, was ranked as the second-largest computer maker using direct mail, moving up to 21st place from 43rd last year. Dell, which placed as the leading computer vendor for direct sales during 1990, is ranked at No. 94 this year, following Gateway 2000 Ltd. at No. 75 and CompuAdd Corp. at No. 80.

FBI wiretap bid called premature

U.S. Rep. Edward J. Markey (D-Mass.) said the FBI's proposal to make all voice and data networks suitable for wiretapping is "premature." Markey, chairman of the House Telecommunications Subcommittee, cited a General Accounting Office report that the FBI has not fully studied the costs, benefits or technical feasibility of its proposal.

Intel ships cost-cutting printer chip

Intel Corp. will ship its 82961KD printer coprocessor chip, which works in printers with its 1960 KX microprocessor and uses technology that can compress a page into memory and then print it in bands. Intel estimated that printers can save 60% on dynamic random-access memory spending.

Datapoint, NT settle 10-year suit

Datapoint Corp. has settled in principle a back-royalties claim filed against it by Northern Telecom, Inc. in 1976. The claim alleged that Datapoint infringed on a Northern Telecom patent for data entry software that Datapoint developed for its general-purpose computers. Datapoint agreed to pay close to $30 million over the next 10 years, a Datapoint vice president said.

Short takes

Banyan Systems, Inc. has affixed a $10.50 per-share price to its initial public offering announced in June. . . . **The Asset Group**, a $65 million, year-old nationwide consortium of network integrators, last week terminated **ILAN, Inc.**'s membership, saying ILAN was unable to meet its financial obligations. The Asset Group said it expects to open offices in key Midwestern cities to handle ILAN's accounts. . . . **Frame Technology Corp.** will acquire **Datalogics**, a competitor in electronic document publishing. Datalogics will operate as an intact entity, and a stock swap is expected to be approved and completed by the end of the month. . . . **Control Data Systems, Inc.**, the computer company spun out from Control Data Corp. earlier this year, has begun trading on the NASDAQ stock exchange under the ticker symbol CDAT.

Gupta readies updated tools

BY JEAN S. BOZMAN
CW STAFF

SAN FRANCISCO — Gupta Technologies, Inc. last week said it plans to ship updated versions of two tool lines — SQL Windows applications development tools and the Quest end-user query tool — by early next year.

The company also outlined an ambitious product development strategy that calls for a new data dictionary and an enhanced version of SQLBase, as well as plans to bolster flagging support services.

The $23 million firm told the 400 users in attendance at its third annual developer conference that key additions will include extensive connections to Microsoft Corp.'s Windows technology, including native support for the Windows New Technology operating system.

New features

In addition, Chief Executive Officer Umang Gupta said SQL Windows 4.0 will also feature extended support for Microsoft's Distributed Data Exchange and Object Linking and Embedding technologies. The firm plans to update Quest, its year-old end-user query tool, by adding SQL Windows extensions and more connectivity to Microsoft Windows applications. The CEO also said Gupta's SQLBase relational database will support Microsoft's Open Database Connectivity specification for SQL access by next July.

Gupta Technologies has sold 13,000 SQL Windows licenses worldwide to users who develop personal computer-based database applications that run against a wide variety of relational database management systems. The target RDBMSs include PC stand-alone databases, IBM's DB2, Oracle Corp.'s Oracle 6.0 and local-area network databases written as Novell, Inc. NetWare Loadable Modules (NLM).

At the same time, the company announced plans to build a data dictionary but did not provide a delivery date.

Also on Gupta's plate is SQLBase 5.1, a version of the company's SQLBase RDBMS certified by Novell for NetWare. The existing SQLBase 5.0.2 can run as an NLM, but by fall, users will be able to install SQLBase 5.1, which is still undergoing beta tests, according to the company.

Industry analysts said the firm, in which Novell holds a 19% stake, must husband its resources if it is to succeed. "They're such a small company that they have to decide whether they're going to be a tools company or a database company," said Darlene Brown, a software analyst at Gartner Group, Inc. in Santa Clara, Calif.

Gupta maintained that Gupta Technologies will continue down both paths, as evidenced by its new tools and plans revealed last week to enhance SQLBase with two-phase commit, stored procedures and triggers, features now standard in other RDBMS products. But to save money, the company will jointly develop many new products with others: A oew IBM Application System/400 router, announced last week, was written under contract to IBM, and Jarrah Technologies in Balgowiah, Australia, is working with Gupta to develop the Pegasus data dictionary.

Cowboy logic

"All and all, we are on the right track," Gupta said. "But as Will Rogers said, if you stand still on [the track] for too long, you're going to get run over. And we don't intend to be run over." Gupta said be expects his 8-year-old firm to reach $32 million in revenue by 1993. Yet he openly acknowledged support problems as the company's licenses grew to 13,000 for SQL Windows, 18,000 for the SQLBase database and 12,000 for Quest.

By next year, the firm will boost the technical support staff from 30 to 40 employees to handle more than 200 phone calls a day. Some users, however, said they have noticed improvements in Gupta's phone support service already.

Paper products player axes service subsidiary

CONTINUED FROM PAGE 1

Shamrock, Inc. — and its sole outsourcing contract with an external customer. The latter involves a 10-year deal to run nationwide information systems for Homeland Stores, Inc., an Oklahoma City-based grocery chain.

Kimberly-Clark is reportedly in the midst of negotiations to sell the subsidiary to Dallas-based outsourcing firm Power Computing, Inc., according to sources close to the consumer goods manufacturer. As of press time last week, neither company was available to respond to questions about the possible deal.

Kimberly-Clark Computer Services is winding down, Barry said, because "the business didn't achieve results consistent with Kimberly-Clark's expectations of 20% return on equity."

According to several highly placed sources close to the company, all of whom requested anonymity, the subsidiary was founded with the goal of hitting $100 million in revenue by 1992; that goal was not within reach, the sources agreed.

In addition, the division waa unable to recruit top talent. "Kimberly-Clark never understood that, in an entrepreneurial venture, you have to offer either equity participation or big bucks if you want to lure the best talent. Neither was available at Kimberly-Clark Computer Services, and top candidates went elsewhere," one source said.

Following a trend

The effective end of the services subsidiary group adds Kimberly-Clark to the growing list of major commercial companies that tagged their IS shops as potential profit centers only to find that buying into the outsourcing bonanza and selling into it are distinctly different propositions.

"Lots of firms have said to themselves, 'Hey, we have a very well-run shop; let's tune it up and sell on the outside what we sell on the inside,' " said Susan McGarry, an analyst at Boston-based market research and consulting firm The Yankee Group. "Agway did it; Mellon Bank did it."

Mellon Bank Corp. — assailed by competition from big-league outsourcers and hard hit by the recent failure of one of its largest outsourcing customers — is currently reassessing its future as an outsourcing vendor [CW, March 2].

What users-turned-vendors fail to appreciate is that "running your own shop and managing a customer's are two very different disciplines, with different pricing models," McGarry noted. For starters, she said, large commercial firms as a group tend to underestimate the subtle but vast financial and cultural chasm between marketing a service to other corporate divisions and competing in brutally competitive external markets.

In fact, during its almost four-year lifetime, Kimberly-Clark Computer Services sold its outsourcing services to only one external account: Homeland, a "nearly $1 billion" grocery chain, according to its IS director, William Rulla. Last winter, Homeland signed a 10-year, "over $30 million" IS outsourcing deal with Kimberly-Clark Computer Services.

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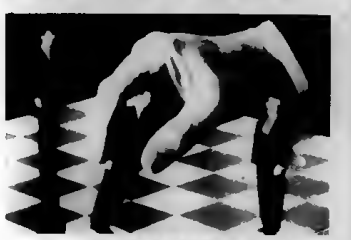
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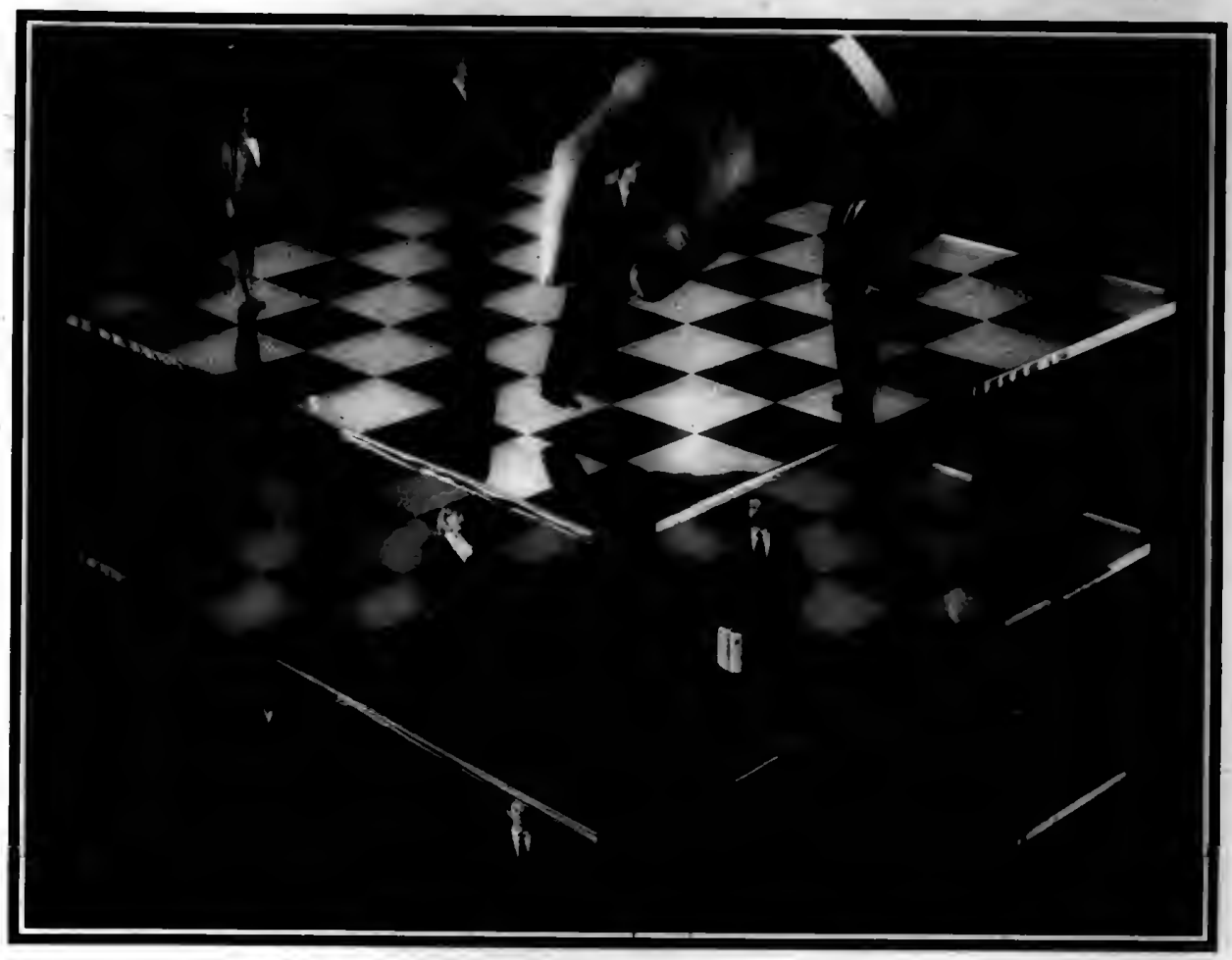
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Home Depot gets Unix 'renovation'

BY THOMAS HOFFMAN
CW STAFF

ATLANTA — Escalating transaction processing demands have led the nation's largest home improvements retailer to start swapping Data General Corp. MV 2500 and 3500 minicomputers at each of its 200 outlets with Hewlett-Packard Co.'s RISC- and Unix-based HP 9000 Model 827 midrange systems, according to W. Andrew McKenna, senior vice president of corporate information systems.

Faced with an 80% annual growth rate in transactions processed three years running, The Home Depot, Inc. recently decided to replace its proprietary minicomputers with cheaper and faster reduced instruction set computing (RISC)- and Unix-based systems. The switch is expected to provide each Home Depot outlet with the increased transaction processing capacity needed to support burgeoning operations such as tracking merchandise movement from the firm's point-of-sale terminals.

Starting in June, Home Depot swapped systems at 54 outlets. McKenna plans to complete the replacement of more than 200 in-store systems by October, be said.

McKenna would not disclose the cost of the project but said Home Depot paid considerably less than the $25,000 list price for each HP machine. Factoring in the company's plans to install HP units at each new store during the next four years, analysts targeted the Home Depot/HP deal to be in the $10 million range.

McKenna said the HP systems have already begun to justify their purchase. "We've already saved a great deal [of money] in price/performance," McKenna said. He added that the DG minicomputers "were out of gas and limiting our ability to do business."

Indeed, the company has experienced explosive growth in its 13-year history. Sales for the $5.1 billion retailer have been growing at an impressive 35% annual clip. In 1991, store sales rose 11%, and the addition of 25% more stores each year has helped fuel the increase in transactions processed.

Branching out

McKenna, who came to Home Depot three years ago after working for the firm as an IS consultant with Deloitte & Touche, said the company will have 214 stores in 17 states by the end of this year. By 1996, the company plans to increase its presence to 500 stores in 35 states.

Seventy-five percent of the firm's stores are in Florida, California, Texas and Georgia, but the company has recently been expanding its operations in the Northeast. A spokesman said the firm plans to enter the Pacific Northwest and Midwest markets in 1993.

McKenna said the new HP systems will be linked via satellite to an IBM 3090 400J mainframe at the company's main data center in Atlanta and to the remaining DG MVs at the firm's two regional data centers in South Plainfield, N.J., and Fullerton, Calif.

The IBM 3090 400J in Atlanta is being upgraded to a Model 600, McKenna noted, and there are plans to replace that unit with an Enterprise System/9000 mainframe within two years. The IBM 3090 Model 600 is slated to be up and running by the end of the month.



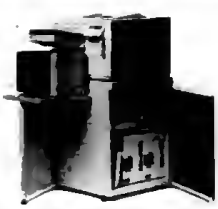
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HEWLETT PACKARD

Sweet deal may force IS change

BY ELLIS BOOKER
CW STAFF

CHICAGO — Archibald Candy Corp.'s information systems department will put on some weight in the coming months, as the department upgrades its corporate data center and absorbs the operational systems for 200 new retail locations.

Cleveland-based Chocamerican, Inc., the U.S. holding company of Midial SA in France, agreed last week to sell its 200 Fanny Farmer Candy Shops, Inc. retail stores to Archibald unit Fannie May Candy Shops, Inc. for an undisclosed amount.

The sale will make 77-year-old Fannie May the largest retail candy chain in the country, with 450 outlets. It already operates 250 retail stores in the Midwest, Mid-Atlantic and Florida regions.

Archibald plans to upgrade from the current IBM Application System/400 Model B70 to a Model E70, according to Sharon Gunia, vice president of IS.

Gunia, who has seven employees in her department, said she expects to "handle the volume with our current staff." She added that Fanny Farmer's inventory, personnel and store leasing data would be whipped into Fannie May's applications.

For the longer term, she said, the candy concern was evaluating point-of-sale (POS) technology for the outlets, which currently use cash registers.

"We've been looking at POS and will certainly be taking a much harder look now," she said.

The two candy retailers said they expect to conclude the sale before the end of next month.

ADVANCED TECHNOLOGY

Neural networks take on real-world problems

BY HAL GLATZER
SPECIAL TO CW

Making computers work more like real brains than light switches hasn't been easy, but practical applications of neural networks are emerging. The most dramatic — though they're also the hardest to bring to market — are those involving pattern recognition.

In writing conventional software, programmers anticipate likely inputs and issue instructions for responding to them. A neural computer, however, responds to inputs on its own and in much the same way that biological neurons do: Just the right combination of incoming signals will trigger an outgoing signal.

A network of silicon neurons will "learn" to recognize patterns by having "wrong" answers corrected, by "remembering" what is "right" and then by trying to make subsequent choices come closer to the correct ones.

These systems are not stand-alone decision makers; so far, they are only helpmates. For example, by transferring to a neural net much of its know-how for measuring the sulfur content of coal, Science Applications International Corp. in Santa Clara, Calif., has developed a computer that detects explosives in baggage before they can get aboard an airplane. These machines are now installed at New York's Kennedy Airport and other airports.

Russ Cole, Science Applications' division manager for explosive detection products, explained that when various materials absorb low-energy neutrons, they release gamma rays at different rates in characteristic "signatures" or patterns.

The company had been exploring new applications for this phenomenon. They had developed equipment to distinguish high- from low-sulfur coal on a conveyer belt, for mine and electric utility operators. By altering the software, they enabled the computer to detect nitrogen — the key element in explosives. If something in a bag produces the signature of a mass rich in nitrogen, the system alerts a human security guard to examine it by hand.

Medical applications

Neuromedical Systems, Inc. in Suffern, N.Y., uses a neural network to make Pap smear tests more reliable. "Searching for abnormal cells on a laboratory slide containing half a million cells is like looking for a needle in a haystack," said Marjorie Rothenberg, Neuromedical Systems' vice president of marketing.

"This is not quantitative analysis," she said. "When cytology [cell-study] technicians have to visually examine every slide, their error rate is often between 15% and 50%. That means as many as half of the positive cases may be missed." The Papnet system that Neuromedical Systems developed "optimizes the combination of machine vision with human intelligence," Rothenberg said.

The system, using a chip set developed by HNC, Inc. in San Diego, picks out 128 of the most abnormal-looking cells, based on criteria that it has learned in much the same way that human lab technicians learn to recognize them. The computer then displays these images on a color monitor for cytologists to review.

"We feed it thousands of images of normal and abnormal cells in varying positions of overlap and juxtaposition, using different color stains," Rothenberg said. When Papnet is confronted with a new image, it assigns a score to that image along a normal/abnormal continuum.



Janell Genovese

Papnet was developed in-house and patented by company founder Mark Rutenberg; its hardware and software are proprietary. Some 25 laboratories now use the Papnet system, paying Neuromedical $5 per slide.

Rothenberg cited clinical studies at Montefiore Medical Center in New York, showing that the error rate for Papnet is less than 3%.

Financial applications

The numbers on the bottom of paper checks are printed with magnetic ink, and computers have been reading them magnetically for years. But Verifone, Inc. in Redwood City, Calif., has found a better way to do it. A maker of credit-card systems, Verifone has now added a point-of-sale (POS) check reader called Onyx. It was jointly developed with San Jose, Calif.-based Synaptics Corp., which produced the I-1000 neural net chip set used in Onyx.

"In the real world, half the checks that pass quality assurance are still outside the ANSI specification for printed check numbers. Though people can read them, they make trouble for conventional magnetic check-reading machines by being blurred, off-center or incomplete," said Quresh Sachee, Onyx's product manager.

The neural network-based system "sees" the image with what the company calls a silicon eye. By looking for certain shapes, it can recognize characters whether they are accurately printed or out of spec — even if they are incomplete, according to Sachee.

Onyx is intended to resemble the POS verification of credit cards, with which most consumers are now familiar. A salesclerk swipes the check through a slot. Onyx reads it, and the data is sent via Onyx's RS-232 port to the store's computer, which dials for authorization. Onyx costs between $200 and $300.

Researchers are continually working to improve neural networks and to develop ideas that could eventually emerge from the laboratory as commercial products.

At least one pioneer, however, prefers to remain a theoretician. Bernard Widrow, a professor of electrical engineering at Stanford University, developed some of the original neural network software in the 1960s.

"What I've mainly found," he said, "is that the right way to do things like this is by letting the system design itself. It has to be done in software; you can't do it with hardware." The same could be said of all the recent neural network developments.

Glatzer is a New York-based writer.

Virtual reality steals the show at Siggraph

BY ELLIS BOOKER
SPECIAL TO CW

CHICAGO — The longest lines at the recent Siggraph '92 were outside virtual reality demonstrations sponsored by several vendors.

As attendees strapped on virtual reality helmets and sensor-attached gloves for five minutes inside various computer-generated environments, virtual reality vendors insisted their technology was not just an amusement — a solution looking for a problem, as some have called it — but an interface that has already shown value in applications ranging from drug and architectural design to military simulations.

Virtual reality "is actually an important element, a next step, in computer interfaces," said Peter Cornwell, chief executive officer of Division, Inc. in Redwood City, Calif. Division was recently formed in a collaboration between two U.S. virtual reality companies — Crystal River Engineering in Groveland, Calif., and Fake Space Labs in Menlo Park, Calif. — and Division Ltd., a UK-based virtual reality company.



NASA

Virtual reality *is more than amusement, according to its backers*

One important doorway into that "real world" of third-party application software, Cornwell said, will be the development of virtual reality standards.

In fact, Division and Autodesk, Inc. announced at Siggraph a project to jointly develop platform and peripheral-independent interface standards for virtual reality applications.

Another notable standards-related development at Siggraph was the unveiling of a new version of PEX, the distributed three-dimensional network graphics protocol extension of the X Window System.



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IBM

EDITORIAL

High stakes



Take a stab at this quiz.

1. *In the past decade or so, IBM has reorganized itself:*
a. twice.
b. six times.
c. I've run out of fingers and toes.
d. some of the above.

2. *Each of these reorganizations has:*
a. fundamentally changed the way IBM does business.
b. lasted at least until the next reorganization.
c. been a boon to the stationery industry.

What the various reorganizations ended up being were simply one affirmation after another of business as usual at IBM, where the corporate office allocated development resources to reorganized divisions in line with the highest principles of bureaucracy and corporate politics.

As one longtime IBM senior executive told me recently, divisional hatchlings were allowed just enough autonomy and freedom to become successful. Then they'd be sucked back into the corporate, mainframe-centric abyss in another reorganization, just like the original PC division that experienced phenomenal success 1,500 miles away from IBM headquarters and then was absorbed and gutted.

But at last, it does appear that things are changing at IBM in a permanant way. As we reported last week, IBM is preparing to spin off the PC division into a separate subsidiary at the urging and direction of line execs, not at the behest of the board or senior corporate managers.

So what's new about that? What's new is that, taken in the context of other changes at IBM, it is becoming more clear that the company is undergoing a major shift in its fundamental operational philosophy. This shift will ultimately remake the firm into a more nimble international competitor — with clear benefits for its customers.

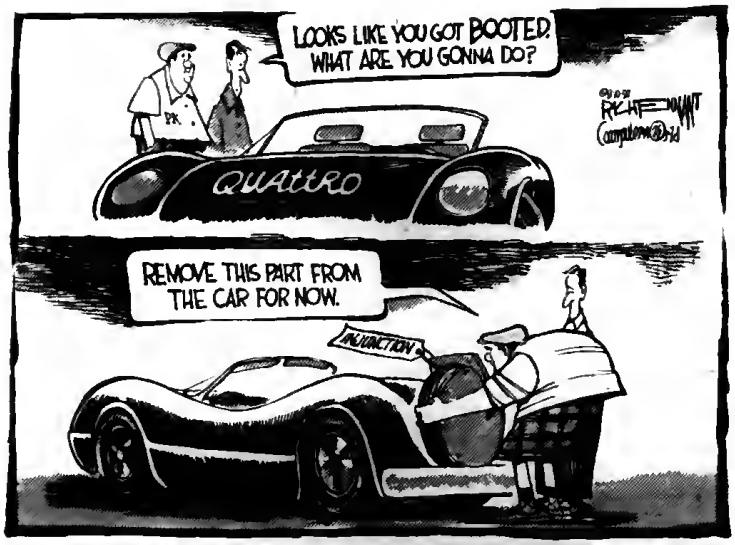
There are many signs of real change. IBM has formed unprecedented partnerships with competitors such as Toshiba, Siemens, Apple and others. The newly created business units and subsidiaries often find themselves competing with one another for services.

But most significantly, the division managers boast of newfound autonomy in decision-making and independence from a bureaucracy that seems to be fading fast. In the words of one subsidiary president, "The message I'm getting from the board is to push myself out to the far reaches of the [IBM] solar system. This is not the way it's been in the past."

Whether or not this decentralized strategy is successful, it does appear that IBM and Chairman John Akers have irretrievably rolled the dice in what is arguably the biggest gamble in the company's history.

Bill Laberis

Bill Laberis, *Editor in chief*



LETTERS TO THE EDITOR

Misunderstood hackers get no respect

I just read the replies to Chris Goggans' "Hackers aren't the real enemy" [CW, June 29], and I thought I'd address a few of the points brought up. I'm a hacker — which means that I'm every system administrator's nightmare.

Hardly. Many hackers are politically aware activists. Besides being fueled by an obsession for mastering technology (I call it a blatant disregard for such), true hackers live and obey a strict moral code.

All this talk about the differences between voyeurism and crime: Please, let's stop comparing information access to breaking into someone's house. The government can seize computers and equipment from suspected hackers, never to return it, without even charging a crime. I will not sit back and let Big Brother control me.

The Cruiser
Anytown, The World

Software escrow advice not well taken

Although Joel Gilman may be quite knowledgeable about computer law, his article, "Don't rush into an escrow" [CW, July 20], shows little insight into business realities.

The escrow decision should be guided by one factor — the extent to which the organization would be impacted by its loss. Whether software is mass-marketed or customized has nothing to do with the financial and business costs of replacing it.

As to his comments about a bankruptcy trustee's preventing release, we have been in the software escrow business since 1982, have released more source code than any other agent in the country, and the courts have never stopped us.

Adele S. Revella
DSI, Scottsdale, Ariz.

Name calling is out of control

I was prompted to write by "Lofty ideas don't build systems" [CW, June 15].

Let's talk about the people who create informatioo systems. There is confusion about what people involved in this process call themselves. Francis Walnut's column furthers this confusion and voices some common but questionable conclusions.

Much of the confusion stems from people's need to slap a single label on anything, no matter how complex, and the failure to distinguish between job titles and the functions that make up the process.

It seems that there has always been a reluctance to call programmers programmers. This tendency is picking up speed as they are increasingly being called developers or, as in Walnut's column, implementors.

It's true that most programmers are not just coders. But is it reasonable to expect a single person to develop the people skills and maintain the technical skills needed to perform the job "end-to-end" as Walnut suggests?

David Mulligan
Warren, N.J.

Less can mean more

This is in response to "Put to the test" [CW, July 27].

As the developer of Pennsylvania Blue Shield's usability program, I'm thrilled to see that the benefits of usability engineering are finally becoming more accepted throughout the industry.

However, laboratories do not have to be expensive. The article indicates that labs can "range between $60,000 and $200,000 for the more sophisticated labs." Pennsylvania Blue Shield built its first usability lab for less than $12,000.

While certainly the $12,000 equipment is more limited in what it can do, the bottom line is that it works.

It works because Pennsylvania Blue Shield has what Dave Rinehart refers to in the article as a "sound methodology" for developing new applications.

Patricia C. Camvel
Camp Hill, Pa.

Computerworld *welcomes comments from its readers. Letters may be edited for brevity and clarity and should be addressed to Bill Laberis, Editor in Chief,* Computerworld, *P.O. Box 9171, 375 Cochituate Road, Framingham, Mass. 01701. Fax number: (508) 875-8931; MCI Mail:* COMPUTERWORLD. *Please include a phone number for verification.*



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BUSH VS. CLINTON: Technology imperatives

■ *Spending for education, stimulation of private sector investment...*



Scientific and technological advancement has always been at the heart of our nation's pioneer spirit, pushing at the boundaries of our knowledge, creating economic opportunity, increasing our standard of living and making this world a healthier and safer place in which to live.

Indeed, the companies that have developed our advanced technologies have played a key part in what I believe is the greatest triumph of our time: the free world's great victory over totali-

tarianism in the Cold War. In addition, nearly all the great postwar inventions — computers, microelectronics, genetic engineering, fiber optics — were invented in America.

The U.S. still has the largest, most productive economy in the the world, and the 21st century will demand a new age of American competitiveness in a fiercely changing global marketplace. In order to compete, we must have the best-educated workers in the areas of science and technology.

Two of my administration's six national education goals call for making U.S. students the best in the world in mathematics and science achievement by the new century and providing teachers the flexibility to create disciplined environments conducive to learning.

My 1993 budget proposes increased funding to train the 770,000 elementary and secondary science and math teachers around the country, and it doubles the number of federally supported teachers receiving training in these areas.

More science scholarships

My proposed budget also increases funding for national science scholarships to $15 million and more than doubles individual awards to $6,000. Other major elements of my education initiative will provide excess federal computer and scientific equipment for precollege education.

My 1993 budget reaffirms my commitment to science and technology by placing particular emphasis on civilian research and development. We are investing in areas of R&D that not only support the mission requirements of federal agencies but that also have potentially broad applications in the private sector. Indeed, we are seeking to speed up the transfer of technology from federal labs to private industry.

My administration's support for high-performance computing and communications provides an excellent example of how the government, industry and academia can work together on the underlying research needed to develop new technologies. It will help achieve software innovations and seek to combine the power of major computing resources with extremely fast communications.

I believe we need to stimulate private-sector investment — the engine of our entrepreneurial economy. That's why I'm fighting hard to slash the capital gains tax rate and make the R&D tax credit permanent.

The challenge is clear, and my policies are making sure that the U.S. will lead the world into the future with even greater accomplishment.

■ *Rechanneling of defense funds, creation of high-skill work force...*



America is the world's greatest inventor, but we do not make the most of our genius. American scientists invented the microwave, the VCR, the color TV and the memory chip, but today other nations make the most of those products. We win the battle over patents only to lose the war over jobs, profits and wealth.

We need a national strategy to invest in technology, and the shift from a defense- to a civilian-based economy presents a tremendous opportu-

nity. A Clinton administration will reinvest every dollar we cut from defense research and development in civilian R&D.



Robert Neubecker

We'll conduct a national jobs inventory to better direct our resources, and we'll create an education fund to retrain defense professionals in the latest civilian technologies.

Civilian DARPA

We'll also establish a civilian advanced technology agency modeled loosely on the Defense Advanced Research Projects Agency.

This agency will bring together businesses and universities to develop cutting-edge technologies. It will increase our commercial R&D spending and focus efforts on key industries such as biotechnology, robotics, high-speed computing and environmental technology.

A Clinton administration will also provide tax incentives that encourage improvements in technology. We will permanently extend the R&D tax credit to reward companies that invest in ground-breaking new products, and we'll provide a targeted inventment tax credit to encourage investment in new plants and productive equipment.

We'll also offer a 50% tax exclusion to those who take risks by making long-term investments in new businesses that create new products.

But it isn't enough to invest in technology for today. We need to invest in our people for tomorrow.

George Bush thinks America can achieve a high-wage economy without a high-skill population. I disagree. I think that to compete in today's technology-intensive global economy, we need a highly skilled work force.

Lifelong education

A Clinton administration will create a revolution in lifetime learning. We'll improve education from preschool through high school and establish a National Service Trust Fund to give every American the right to go to college.

But we'll also establish a National Apprenticeship Program so that young people who don't go to college can achieve their full potential.

And, we'll require every employer to spend 1.5% of payroll for continuing education and training of all workers, not just executives.

We'll make sure that, as America develops better technologies, our work force is ready to use and market them.

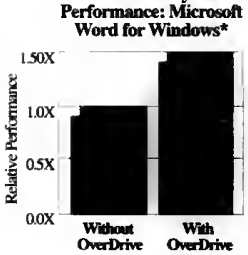


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NEW

■ Automatic logon	**YES!**
■ Map drives; pick servers and volumes on the fly	**YES!**
■ Print queue monitoring	**YES!**
■ Suspend, delete or resume print jobs from within Quattro Pro 4.0	**YES!**
■ Notification of completed print jobs	**YES!**
■ Full NetWare security measures	**YES!**

"Borland's new Quattro Pro 4.0 is the only application that takes full advantage of the NetWare application development environment."

—John Edwards
Vice President of Marketing
Novell NetWare Systems Group

Quattro Pro is Novell NetWare optimized!

With Quattro Pro 4.0 it's easy to get the maximum benefit from the network environment. Data and resource sharing is simple and transparent. NetWare drives are easily mapped by choosing servers and volumes from pick lists displayed inside Quattro Pro. Data integrity is always protected with automatic file locking. Print jobs are managed right from Quattro Pro. There's even notification when a print job is finished!

Pushbutton power!

Quattro Pro's pushbutton power gets your work done faster. The built-in, customizable, context-sensitive **SpeedBar**™ gives you instant access to frequently used commands in simple English. And **Intelligent Graphs** let you perform extended analysis with your graphs without changing your data. Plus you get a variety of advanced features that enhance your productivity. Now's your chance to step up to the NetWare spreadsheet force of Quattro Pro.

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Gentlemen, start your notebooks

Computer analysis is crucial in the high-stakes world of IndyCar racing

BY MICHAEL FITZGERALD
CW STAFF

WARREN, Mich. — From Loudon, N.H., to Laguna Seca, Calif., and points in between — significantly, Indianapolis — IndyCar racers cross the country with their cars in huge, custom-designed trucks filled with spare parts, tools — and notebook computers.

An IndyCar team typically travels with a virtual mobile data center, with notebooks providing the bulk of the computing power. Some of the more advanced teams have large databases, such as Penske Racing, Inc., which keeps two years of race data on compact disc/read-only memory.

In the high-stakes, split-second world of IndyCar racing, where improper responses to the conditions can blow a million dollar vehicle, computer analysis can provide an edge. Unlike the average consumer car, where the engine is set to run at a 14.7 fuel-to-air ratio, IndyCars get tuned to the best performance for the day.

"One thing it does is keep the drivers honest," said Paul V. Rochotte, an electronics engineer at Penske Racing. "At the end of each test, we sit down with the drivers and the engineers, and the driver talks about how the car handled, and we'll run the data and compare. They may say the car wasn't accelerating well out of a turn, and we'll run the data and see they actually shifted down to fifth."

Driven to improve

But Richard Amacher, director of MIS at General Motors Corp.'s motor sports technology group, said the good drivers usually use the computer as a self-improvement tool, while the automakers use data to influence parts design.

All the software is custom-built. GM, for example, uses systems built to run under Microsoft Corp.'s Windows 3.0. Car makers, including GM and Ford Motor Co., send teams to support the racers that use their engines and to gather their own data on how the engines perform under various conditions.

There is a practical side to the racing as well, at least for companies such as GM.

"We're not into this for fun; racing is a test bed for things that might go in passenger cars," said Thomas J. Murphy, a programmer at GM's Technical Center. At GM, software developers such as Murphy spend two years with the Motorsports Group, then go back to passenger car

Continued on page 32



GM Motor Sports Technology
Warren, Mich.

- **Goal:** To improve race times through data analysis.
- **Technology:** 386SX notebook computers and customer-built databases.
- **Results:** More efficient tuning of engines and tracking of problems. Cars almost never run out of gas on the track. Technology use provides test ground for consumer cars.

Apple preps new Macs, joins price cut battle

BY JAMES DALY
CW STAFF

CUPERTINO, Calif. — Apple Computer, Inc. will join the savage price-cutting wars among personal computer makers next month when it marks down the price tags of several models in its Macintosh line, sources close to the company said recently.



In addition, Apple has reportedly penciled in Oct. 19 as the date when it will introduce three new Macintosh models featuring built-in compact disc/read-only memory drives. The machines will be priced from $1,500 to $2,700 and will take the place of the Macintosh SI and Macintosh CI, according to sources.

The new models will be designed for both multimedia and desktop publishing applications, and at least one of the machines will be sold through department stores or consumer electronics chains.

Apple last week introduced a new version of its midrange PowerBook 140 notebook computer at the MacWorld Exposition in Boston. The new model was designed to run at nearly the same speed as the top-of-the-line PowerBook 170.

The PowerBook 145 has a suggested retail price range of $2,399 to $2,799 and is the first PowerBook to have video capabilities. It comes with 4M bytes of memory and either a 40M-byte or 80M-byte disk drive. The model sports a supertwist display and is powered by a 25-MHz 68030 chip. The earlier PowerBook 140 used a 16-MHz 68030 chip.

The introduction of the PowerBook 145 is the first move in what is expected to be an overhaul of the popular PowerBook line; the 100 and 170 models are expected to be replaced in early October with two other PowerBooks that will offer a slimmer design, higher performance and an active-matrix display.

Although the extent of the overall Macintosh line price reduction was uncertain, observers predict it could be 10% or more.

Apple Chairman John Sculley has said in the past that a key piece of his strategy to boost the company's market share will be to remain price-competitive.

Macintosh price reductions could have serious consequences for Apple workers. When Apple chopped prices in the past, restructuring and layoffs sometimes followed.

While Apple had gross profit margins of 44% during its last fiscal quarter ending June 26, the company's margins are likely to drop into the 35% to 40% mark by the end of the year, according to analysts.

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T6400DX

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T2200SX

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T4400SX/Gas Plasma

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T4400SX/LCD

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intel inside

Which, after everything we've told you, does seem like the logical next step.

T6400SX



In Touch with Tomorrow

TOSHIBA

Casino, Blood added to virus watch list

BY JAMES DALY
CW STAFF

The dog days of August are peppered with many of the same annoying viruses that popped up last month — except for two nasty exceptions.

Casino and Blood are two rare but destructive viruses that share the same Aug. 15 trigger date, according to officials at Fifth Generation Systems, Inc., a Baton Rouge, La.-based developer of data security software.

Casino infects .COM files when directory commands or .EXE files are executed. Although it can be activated on any day (when it decreases the total system memory and available free memory), it becomes particularly destructive on Aug. 15, when it can destroy a personal computer's file allocation table (FAT).

When Casino kicks in, a slot machine will appear on the screen with a warning message. Once the slot machine portion of the virus has been activated, the data on the hard disk will be lost.

Blood is less destructive. It infects any .COM file in the root directory. On Aug. 15, Blood causes a system to reboot after an infected file is executed, usually the COMMAND.COM file on a PC. The system will then show a cascading screen effect, with characters randomly falling down the display. Any execution after Aug. 15 will result in the system hanging up.

As with all viruses, the dates of their expected occurrence are made for general awareness and are not exclusive. Skilled programmers can do a little tinkering under the hood to change a few lines of code and make the virus go off whenever they desire. Experts advise scanning any new disk before it is used as well as the three basic rules of virus protection: backup, backup, backup.

Other August virus characteristics include the following:

• **Mendoza** — A rare strain of the Jerusalem or Friday the 13th virus that deletes the infected file and all files in its directory. It differs from Jerusalem in that it can crop up at any time during the last half of the year, instead of on Friday the 13th, which is the activation date for the most common Jerusalem virus.

• **Bad Guy 2, Exterminator, Demon** — All are forms of the I-B virus, which is a nonresident overwriting virus that infects all .COM programs in the current directory. Infected programs will have the beginning of the program overwritten by viral code.

• **AHI** — This strain is based on the V1824 virus and infects .COM programs. Symptoms include a decrease in system and available free memory and system crashes.

• **Crew 2480** — A nonmemory resident infector of .COM programs that are more than 10K bytes in size. When activated, it changes the file date and hangs up the system, which then reboots.

• **Argentina** — A nondestructive virus that affects all .COM files, except COMMAND.COM files, through a terminate and stay resident infector. Symptoms include .COM growth and messages that pop up in Spanish and note the day's importance in Argentina's struggle for independence.

• **Day 10** — A nonresident direct-action infector of .COM programs. Symptoms include .COM file growth, file date and time change and hard disk corruption.

• **Alabama** — Remains resident and infects .EXE files only. It moves into memory when any infected file is executed. One hour after activation, the virus displays the following message in a flashing box: "Software Copies Prohibited By International Law Box 1055 Tuscambia Alabama USA." It affects runtime operation, corrupts program or overlay files and corrupts file linkage.

• **Frere Jacques** — Enlarges .COM and .EXE files and plays the tune "Frere Jacques" on Fridays. Available memory may decrease. Systems may crash.

• **Pay Day** — Increases size of .EXE and .COM files. The system may slow down. Files may be deleted on any Friday except Friday the 13th.

• **Taiwan** — Infects .COM files, including COMMAND.COM files. When an infected program is run on the eighth day of any month the virus will perform an absolute disk write for 160 sectors, starting at logical sector 0 on the C: and D: drives, overwriting the partition tables, boot sectors, FATs and root directories.

• **Monxla** — A nonresident infector of .COM files, including COMMAND.COM files. Infected .COM programs will increase in length by 535 bytes. Typically located at the end of infected programs.

• **Skism** — Host files are .COM; .EXE and overlay files. Skism may affect computer performance or functions, and it corrupts the programs it infects.

Dog day viruses



The primary defenses against computer virus infection are scanning of software packages and backup. A number of scanning applications are available from Symantec, Central Point Software, McAfee Associates and Fifth Generation Systems. Bulletin board services may also offer free shareware scanning packages.

According to FGS Virus Watch, these viruses are expected throughout the rest of this month:

August

All month: Crew 2480, Mendoza
Each Monday: Bad Guy 2, Exterminator
Each Tuesday: Demon, AHI
Each Friday: Alabama, Frere Jacques, Pay Day. Skism will hit the last two Fridays of the month.
Every 10 days (Aug. 10, 20, 30): Day 10
Aug. 8: Taiwan
Aug. 13: Monxla
Aug. 15: Blood, Casino
Aug. 17: Argentina
Aug. 18: Form 18
Aug. 24: Form



Special deals may tempt small PC sites

BY ROSEMARY HAMILTON
CW STAFF

Several smaller user sites contacted recently said that while they found the recent personal computer software megadeals intriguing, they did not expect such an offer to come their way.

"I don't buy in those quantities, so I don't play in that league," said Thomas Loane, vice president of information systems at Alamo Rent-A-Car, Inc., in Fort Lauderdale, Fla.

But Loane and other users may soon be surprised to find who is knocking at their doors.

Strategy shift

Smaller companies, typically those with a few hundred PCs, will likely be the next focus of attention as software companies try to build share in the Microsoft Corp. Windows market.

"I think what we will see very quickly is the scale of the license deals coming down," said Jeff Tarter, editor of "SoftLetter," an industry newsletter published in Watertown, Mass.

"The deals won't be for 25,000, but for 250," Tarter said.

Recently, Price Waterhouse signed an agreement with Borland International, Inc. to standardize on four applications for 25,000 users. Meanwhile, Andersen Consulting is finalizing a deal with Microsoft for use of a set of its applications for up to 65,000 users.

Some companies, such as Computer Associates International, Inc., already offer licensing agreements for smaller quantities.

Sanjay Kumar, a senior vice president at CA, said some of CA's licensing programs require a minimum of 250 machines, while a couple of policies require as few as 50 machines.

However, other companies are just now evaluating options that would be more favorable to smaller companies. Late last month, Lotus Development Corp. said it is developing a program in conjunction with resellers to offer volume purchase agreements to smaller, or "mid-tier," companies.

"We've licensed based on users, based on workstations, based on a server-concurrent user pricing scheme," said Bob Burns, manager of business development at Lotus.

Minimum purchase

Burns said the new volume purchase agreement will be ready in the fourth quarter. Currently, users must commit to a minimum of $100,000 per year to participate in some volume purchase deals.

A few users said the recently announced megadeals caused some concern. One customer said he hoped the smaller users would not get hit with higher costs to offset the price breaks that are part of the megadeals.

"My concern was they would go too far and then strike an average price where smaller companies would get penalized," said Keith Sievers, vice president of information processing and treasurer at Federal Kemper Insurance Co. "I'd hate to see it happen [where] you'd pay X amount for a site license and it wouldn't matter if you had five copies or fifty."

Start your notebooks

CONTINUED FROM PAGE 29

development. Murphy spent two years on the Cadillac Brougham development team before he changed pace.

John Faivre, another Penske engineer, said cars rarely run out of gas on the track now — a constant fear in the past — because fuel use is monitored closely. Engineers sometimes catch engine problems before they happen, as well, which can save a lot of money: An engine can cost $250,000, and an additional $100 per mile just for maintenance — $50,000 for a race such as the Indianapolis 500.

The typical IndyCar has three on-board computers, small black boxes that can be programmed to dictate how often the spark plugs fire or when fuel gets injected.

The three computers measure 16 or more variations of engine conditions with each rotation of the drive crank.

Small displays on the dashboard allow drivers to access a great deal of data, though usually they choose not to take their eyes off the road.

There is too much data than can currently be analyzed effectively during a race. For teams that use real-time data feeds — transmitted from the car at intervals as rapid as once per second during a run — up to 128 pages of data can be generated from just one lap, and a full race can produce up to 7M bytes of data.

While teams get up-to-the-second information on the car's performance, this is also costly: A basic system from a company such as Pi Systems Corp. in Portland, Ore., can cost $30,000 to $32,000.

Plugging in the computer has joined tire changing and refueling during pit stops. Many teams focus on pulling data from the on-board computer, then crunch numbers as the car roars through the miles.

Racing engineers said that if you have done your job correctly during the week, the engineer who handles the computer during the race should be bored. Even so, they spend the race analyzing data and tracking miles per gallon — ideally, an IndyCar racer aims for more than 2 mpg.

WINDOWS VIEW

Jesse Berst

Back to school



So you've heard about the benefits of GUIs and rightsizing. Maybe you've even been to a few rightsizing sessions at trade shows. You've decided that your company has to move in that direction.

Now what?

Now maybe you should send yourself back to school. That's what some of your colleagues are doing.

In previous columns, I've talked about the need to retrain users and programmers to make the transition to the graphical interface. But IS managers and executives need periodic re-education, too. In fact, it's easy to argue that they should be the first ones to get retrained so they can lead the rest of the department in the right direction.

Indeed, the need for management re-education is great enough that training places like Microsoft University are now offering such classes. To see what this trend was all about, I recently spent some time at a Microsoft University management class titled "New Architectures for Enterprise Computing."

What kind of education is most important for IS managers? The first need, in my mind, is to get an up-to-date overview of options. This kind of "what it is" training was the focus of the class I visited. The three-day seminar divided its time between three crucial rightsizing topics: operating systems and environments, connectivity and client/server development.

The right path

Once you know where you are going, you need how-to education. Microsoft University, for instance, has an implementation class called "Managing the Migration to Client/Server Architecture." Other training companies have similar offerings.

I was intrigued by the type of people who populated the Microsoft University seminar. Over the past few years, we've seen a surge of people whose job is to monitor technology trends and plan future directions. It's a commentary on the confused state of the industry when companies have to dedicate full-time positions to the task of figuring out what's going on.

For instance, Michael Dechichio, a senior systems engineer at Travelers Insurance in Hartford, Conn., is part of a group responsible for workstation planning. Travelers has 12 mainframes, 30,000 PCs and 400 LANs.

"I was looking for a high-level overview," Dechichio said, explaining why he had signed up for Microsoft University's $1,195, three-day event. "We are already migrating. We have client/server apps out there, and we are building others right now. I wanted a look at the different architectures and strategies."

Many of the other students had similar responsibilities. One was a planner for a British Columbia government ministry. This agency has half of its operation set up on an IBM mainframe and the rest on PCs. Now it is trying to merge the two worlds.

Another student was a manager at Ford, which has about 6,000 PCs worldwide. Although Ford has always been an IBM shop, the recent IBM/Microsoft divorce has Ford wondering about the best migration path from DOS to a GUI.

Similar concerns prompted the IS director for Florida's Metro-Dade County to send himself back to school. Metro-Dade is an IBM mainframe shop with some DEC VAXs. The director is in the midst of making a decision on new tools. He says his organization must change its entire culture from a mainframe focus to a PC orientation.

Is a class like this worthwhile for IS managers? I think so, particularly for those responsible for platform decisions. "It worked out very well for me," Dechichio said. "It covered what I needed." Dechichio said he liked the approach of instructor Bob Jones, a consultant with two decades of experience. His only quibble: "The class was slanted more toward Windows than OS/2." Not surprising, perhaps because the course was sponsored by Microsoft.

Equal time

Jones did give time to all the different options, including those from other companies. And he gave students free rein to make comments.

As with any wholesale change, the transition to Windows-based client/server computing is fraught with pitfalls. One of the most valuable aspects of a class like this one is the chance to learn from the mistakes and solutions of others.

The technology landscape is changing so rapidly that many of the old models don't work anymore. There is no clear, obvious path to the future. Indeed, the choices are so confusing that many companies dedicate full-time employees to the task of exploring the different options.

Berst is the publisher of Redmond, Wash.-based "Windows Watcher" newsletter, a monthly briefing service for software executives and corporate technology managers.

HELP LINE

WordPerfect for Windows



Part of a series of tips provided by PC software vendors and based on questions commonly asked of their customer support personnel. This week's tips focus on Wordperfect Corp.'s WordPerfect for Windows.

Q Can I use the same printer drivers that I use in WordPerfect 5.1 for DOS?

A WordPerfect 5.1 for Windows uses the same printer drivers (.PRS files) as WordPerfect 5.1 for DOS. However, WordPerfect printer drivers that require a Terminate Stay Resident program to function in WordPerfect 5.1 for DOS will not work in WordPerfect 5.1 for Windows.

Q How can I speed up WordPerfect 5.1 for Windows?

A We strongly recommend using an Intel Corp. 80386-based machine or better with at least 4M bytes of random-access memory. If you are running multiple Windows applications, you may consider purchasing additional memory. Here are some additional tips:

- Upgrade to Windows 3.1, which does a better job of handling memory.
- Enhance performance by using a disk-caching utility such as SmartDrive, which ships with Windows.
- Minimize WordPerfect utilities such as Program Manager, Speller and Thesaurus after you first run them rather than closing them each time. This will speed up subsequent launch times.
- Increase the file handles in your CONFIG.SYS file. When you see *FILES=X*, increase the number to at least 30.

Q Should I use WordPerfect or Windows printer drivers?

A Each has advantages: Using WordPerfect printer drivers, you can use the same printer drivers as in WordPerfect 5.1 for DOS, choose from the 900-plus printers supported by WordPerfect and generally print faster.

Using Windows printer drivers, you can print TrueType fonts and screen fonts (fonts other than those built-in or downloaded to your printer) because they will print graphically. Also, you can print color graphics and rotated fonts on dot-matrix printers.

NEW PRODUCTS

Systems

Intelligent Security Systems, Inc. has announced Firmloc, a personal computer access control system.

Firmloc is a hardware/software combination security product that uses a smart electronic key with an internal microprocessor that cannot be duplicated.

The key receptacle connects to the parallel printer port on the PC and automatically locks the computer when the key is removed.

According to the company, the screen turns blank when the computer is locked, and the keyboard, floppy drives and mouse are immobilized, blocking all routes into the system. Once the user inserts the key again, operation resumes exactly where it had stopped.

Firmloc costs $249.95.

Intelligent Security Systems
Suite 1001
18031 Whispering Gables
Dallas, Texas 75287
(214) 869-3663

DataBusiness Systems has introduced PC-101, an Intel Corp. 80386-based, 33-MHz computer system. The product has a 101-style keyboard that contains all of its peripherals and components.

A key feature of the PC-101 is a slot for an 8/16-bit network card. This feature allows the product to operate as a standalone computer, workstation or local-area network.

PC-101 has external ports for an IBM Personal System/2 mouse interface and includes floppy and tape drives, a scanner or light pen and a bar-code reader. Options include an 80387SX math coprocessor, a 32K cache buffer, 2M to 16M bytes of random-access memory and a 2.4K bit/sec. Hayes Microcomputer Products, Inc.-compatible modem.

The standard PC-101 costs $1,495.

DataBusiness Systems
Suite 102
4630 Campus Drive
Newport Beach, Calif.
92660
(714) 252-0990

Software application packages

Marin Research has started shipping ProjectGuide for Windows.

The product is an applications-oriented front end for Microsoft Corp.'s Windows that creates project models for scheduling systems.

Users interact with "guides" that ask questions about the requirements of the project. A task list is generated, and a resource plan is customized for the requirements.

ProjectGuide Professional Edition supporting authoring costs $895. ProjectGuide Personal Edition, without authoring, costs $295, or $199 per copy for quantities of five or more. A full-function Working Model costs $50.

Marin Research
Suite 10
38 Miller Ave.
Mill Valley, Calif. 94941
(415) 389-5444

Macintosh products

Dayna Communications, Inc. has announced the DaynaPort E/II-3 NuBus Ethernet card for the Apple Computer, Inc. Macintosh II series of computers.

DaynaPort E/II-3 allows Macintosh connectivity to any Ethernet wiring scheme. The cards can automatically configure to whatever type of media they are connected to with an auto-sensing technology, according to the company.

DaynaPort E/II-3 has 64K bytes of random-access memory for performance in high-traffic machines such as file servers, and it is fully compatible with the System 6.0 and System 7.0 Macintosh operating systems and the Apple Ethernet driver.

DaynaPort E/II-3 costs $319.

Dayna Communications
Fifth Floor
50 S. Main St.
Salt Lake City, Utah 84144
(801) 531-0600

Radius, Inc. has introduced PrecisionColor 8XJ, an accelerated, 8-bit color interface card for Apple Computer, Inc. Macintosh II computers.

The product consists of a NuBus-based accelerated graphics interface card that can display up to 256 colors on-screen.

Features include on-board acceleration, multiple resolution capability and on-the-fly resolution switching.

According to the company, PrecisionColor 8XJ's auto-install feature ensures easy installation when combined with a Radius display.

The Radius PrecisionColor 8XJ costs $599.

Radius
1710 Fortune Drive
San Jose, Calif. 95131
(408) 434-1010

Aldus' PhotoStyler 1.1: Outstanding in its field

Technology Analysis — A roundup of expert opinions about new products. Summaries written by product research coordinator Derek Slater.

PhotoStyler 1.1, created by U-Lead Systems and now owned by Aldus Corp., was the first available 24-bit image editing software for Microsoft Corp.'s Windows. Reviewers said it is the best in the field for its mix of usability and high-end power.

Ease of use: Most functions in PhotoStyler are fairly intuitive, according to *Infoworld*. The interface features two floating tool bars — one for Selection functions, the other for Painting tools.

Editing tools: The product offers a good selection of retouching tools and strong control over brightness and hue.

Paint/Draw tools: PhotoStyler includes only a line-drawing tool. However, PhotoStyler provides exceptional control over the shape and function of its numerous painting tools.

Output: *Windows* magazine said novice users will find the initial printer calibration process frustrating.

Documentation: The documentation is thorough and well-indexed.

Overall value: For users who need strong prepress color separations and other production-quality features, PhotoStyler's power is worth the hefty $795 price tag.

Aldus PhotoStyler 1.1

Reviewer	Ease of use	Editing tools	Paint/Draw tools	Output	Documentation	Overall value
***Windows* magazine** 7/92	Stands out	Awesome filters	Save your own brush shapes	Calibration is weak	Professional	Heavyweight winner
Infoworld 12/23/91	Very good	Advanced selection	Very strong	NC	Well-written, liberally illustrated	Pay a premium
PC Sources 6/92	Surprisingly intuitive	Superlative	Usual assortment	NC	Thorough	Hefty price tag
Byte 6/92	Paint and Select button bars	Powerful	Only one geometric tool	NC	Extensive on-line Help	The front-runner
NewMedia 8/92	NC	Dynamic effects	No Bezier tool	NC	Straightforward	Solid offering
Users						
Lee Wojnar, Lee Wojnar Studios, Inc.	■■	■■	■	■■	■■	Cutting-edge
Elizabeth Wood, Egeland, Wood & Zuber, Inc.	■■	■■	■■	■▄	NC	Great artistic effects
Michael Johnson, Cypress College	■■	■▄	■▄	■▄	■▄	Good product
Analyst						
Nathan Everett, The Dotson Institute	■▄	■■	■■	■▄	■■	Quick gamma calibration

Key: ■■ Very good ■▄ Good ■ Fair ▪ Poor Reviewer evaluations are excerpts from articles. Refer to actual reviews for details. User and analyst ratings are based on telephone survey. NC No comment.

Vendor financial ratings

Analysts	Short-term performance	Long-term stability
Glenn Powers, Dan Bosworth	■	■▄
Jeff Bernstein, Cowan and Co.	■	■▄

Aldus reported a net loss of just under $1 million for the quarter ended in June. Revenue was $38.9 million

Aldus responds

Sheldon Fisher, senior product manager:

Output: Calibration does take some effort on the part of the user; it isn't necessarily for the novice user. Color technology still requires some expertise with the majority of these products. We're looking at continuing to expand the color support in PhotoStyler.

Image-In Color: Unique, powerful, quirky

Image-In Color 3.0

Reviewer	Ease of use	Editing tools	Paint/Draw tools	Output	Documentation	Overall value
***Windows* magazine** 7/92	Sometimes awkward	Extremely controllable	Supports pressure-sensitive devices	NC	Dull	As powerful as you'll find
***PC* magazine** 12/17/91	Consistent interface	Sophisticated tools	Noteworthy color picker	Gray-scale printing not rich	Lacks index	Wonder if price is justified
Infoworld 12/2/91	Flexible	20 filters	Excellent color capabilities	NC	NC	Has the edge
Byte 6/92	NC	Incorporates text as bitmap	Lines, ellipses, curves, polygons	Automated printer calibration	NC	Interesting prepress features
NewMedia 8/92	NC	Basics plus spatial effects	Geometric shapes and Bezier curves	NC	Needs greater depth	Powerful
Users						
Richard Drake, Advanced Digital Designs	■■	■■	■	■▄	■	Very fast
Marilyn Stephens, 3M Co.	■■	■▄	■▄	■■	■■	Including text is difficult
Ken Blaustein, KB Imaging Associates	■■	■■	■▄	■■	■	Handy color correction
Analyst						
Colin Ralph, Colorepro, Inc.	■■	■■	■▄	■■	■▄	Best color models available

Key: ■■ Very good ■▄ Good ■ Fair ▪ Poor Reviewer evaluations are excerpts from articles. Refer to actual reviews for details. User and analyst ratings are based on telephone survey. NC No comment.

Vendor background information

Image-In is based in Minneapolis. Established in 1989, Image-In creates software products for graphics and desktop publishing. The privately held company does not release financial information; according to outside sources, annual sales are approximately $4 million.

Image-In responds

Kent Eittreim, technical support manager:

Documentation: Our manuals are more of a technical reference, so you can look up each function. The tutorials are an area we're working on right now.

Output: We cover all gray-scale functions that the printer is capable of. We're now shipping Version 3.1, which fixes some problems with EPS files.

Image-In, Inc. offers several versions of its image editing software: a low-cost black-and-white package, a color version and the top-of-the-line Image-In Color Professional, which enhances the basic Image-In Color product with more photographic filters and advanced selection and masking operations. The products run under Microsoft Corp.'s Windows environment.

Ease of use: Image-In Color is flexible, though reviewers said the interface has a few quirks. Some simple operations require multiple double clicks of the mouse.

Editing tools: The tool set is comprehensive, including dialog boxes for brightness and color balance, plus wave, spiral and blur filter effects. The Professional version provides color separations.

Paint/Draw tools: Image-In Color is unique in its support of Wacom, Inc. pressure-sensitive digitizing tablets.

Output: According to *PC Magazine*, the product's on-screen color reductions and gray-scale printing are relatively weak.

Documentation: Reviewers were unimpressed with the documentation.

Overall value: Image-In Color costs $495, while the Professional version costs $795. It is as powerful as any 24-bit image editor on the market.

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COMPAQ

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For ComputerVision, the future is CADDS 5

BY KIM S. NASH
CW STAFF

BEDFORD, Mass. — ComputerVision is facing a turning point. With its proposal for an initial public offering filed in June, a fast, smooth release of a major upgrade to its flagship computer-aided design and engineering tool set is critical.

Yet that trouble-free launch is not a given, according to industry analysts. Some of the features new to this upgrade for CADDS 5, they noted, are old hat to rival products. Plus, ComputerVision has to drag itself out from under the poor reputation of its financially troubled, soon-to-be shut down parent, Prime Computer, Inc.

CADDS 5 Release 2 hit the market last month — about a year after CADDS 5 was first introduced and several months after comparable computer-aided design and manufacturing (CAD/CAM) products from other vendors. The upgrade sports features — such as improved parametric modeling and the ability to let several development teams work on a project at once — that now put it in the running against rival offerings from Parametric Technology Corp. and Structural Dynamics Research Corp.

However, as it tries to distance itself from Prime, ComputerVision will find that it has a lot of ground to make up, said Laura Conigliaro, an analyst at Prudential Securities, Inc. in New York.

A three-year, $14 million contract signed in January with General Electric Co. for CADDS 5 was a solid win for ComputerVision, even if the deal included Release 1 as well as the new offering, she said.

Yet Prime's shaky reputation has opened the door for competitors such as Parametric to rev up marketing and invade ComputerVision's turf, Conigliaro said.

Furthermore, users fracture the market by typically buying design packages from a mix of vendors. Texas Instruments, Inc., an early user of CADDS 5 Release 2, also designs with tools from Parametric.

Features noted

The new release of CADDS 5 is arriving in the nick of time, according to Gisela Wilson, an analyst at International Data Corp. in Framingham, Mass. Among the more notable new capabilities, she said, are the following:

- Concurrent assembly mock-up. The $9,500 module lets different design teams work on big multipart projects.
- Nurbs Surface Design. Car and aerospace companies in particular use nonuniform rational B-spline (Nurbs) techniques to design their products. The product, priced at $15,000, is said to improve a user's ability to smooth surfaces.
- Command line interface. Because they usually use a variety of products from different vendors, CAD/CAM users often prefer text commands over icons.

Unix in the doghouse at pet motel

BY JAMES DALY
CW STAFF

ST. LOUIS — A lot of systems managers are used to hearing their clients howl. But at Kennelwood Village, Inc. they may also bark, bite or pee on the carpet.

The furry clientele who regularly check into this 500-room pet motel are not your average overnight tourists, but they can be just as demanding. A reservation system not only needs to know how long Tootles the terrier is going to stay at Kennelwood, but also whether she needs to be flea-dipped or have her television set tuned to the Cable News Network or a rental movie (*101 Dalmatians* is a popular choice).

Until recently, a wheezing Unix system — The Santa Cruz Operation's SCO Unix running on an IBM personal computer clone — struggled to keep up to date with the 175,000 reservations, cancellations and scheduling changes made each year. According to project manager Emily Schumacher, Unix just wasn't doing the job.

"We were having a lot of trouble," she said. "It seemed as if anytime we even did anything even as simple as reindexing, the system went down."

Even when it was up and running, it was terribly slow, she added. One reason: running non-Unix-based applications such as Fox Software, Inc.'s FoxPro database under an emulator ate up resources. "Something had to be done," she said.

That something was the installation of IGC, Inc.'s VM/386 MultiUser, a powerful PC-based multitasking system based on multiuser DOS and running on a 33-MHz Intel Corp. 1486 processor from Computrend. Schumacher noted that the pet motel wanted a technology that was simpler than a local-area network.

Multiuser DOS products link dumb terminals and PCs to a central processor, thus getting LAN benefits at a fraction of the cost and complexity of actually installing a LAN. Although the idea is not new, it has gained momentum with the advent of powerful chips such as Intel's 80386 and 486.

Since multiuser DOS systems are really MS-DOS systems — they run DOS software, use DOS commands and follow DOS conventions — information systems managers can continue to use familiar DOS applications and commands. Their ease of support, maintenance and installation has thus made them a low-end alternative solution to

Continued on page 40



ON SITE

Kennelwood Village
St. Louis

- **Challenge:** To keep pace with a transaction load that includes 175,000 reservations and other changes each year.
- **Tools:** IGC's multiuser DOS.
- **Results:** System supports more users more quickly, with staff members better able to check room availability.

$49 846 153 984

By the end of this week Computerworld readers will have spent over $49.8 Billion on Information Technology this year – representing nearly half of all IT spending to date in 1992.

COMPUTERWORLD

Unix in doghouse at pet motel

CONTINUED FROM PAGE 39

running a DOS shell under Unix.

"Kennelwood is a very large complex with remote satellites and eight point-of-sale facilities," said Marc Leeds, president of Compet Systems, Inc., a Prairie View, Ill.-based consulting firm that organized the switch. "They wanted all data integrated on the same server and capability for reservations and appointments to be made from any terminal."

In multiuser DOS systems, all access to the shared disk and file system is done directly to the bus, not across additional layers of network hardware and software. The DOS-based VM/386 was teamed with a customized software package from Compet to replace the Unix system. VM/386 MultiUser's processing power is consolidated with the Computrend PC equipped with two 860M-byte Small Computer Systems Interface (SCSI) drives. Leeds said the two SCSI drives solved the performance problems of the Unix system. "We run slower functions like word processing on one drive, while things like boarding, grooming and training schedules go on the other," he said. Schumacher added: "The speed increase is tremendous. It's like night and day."

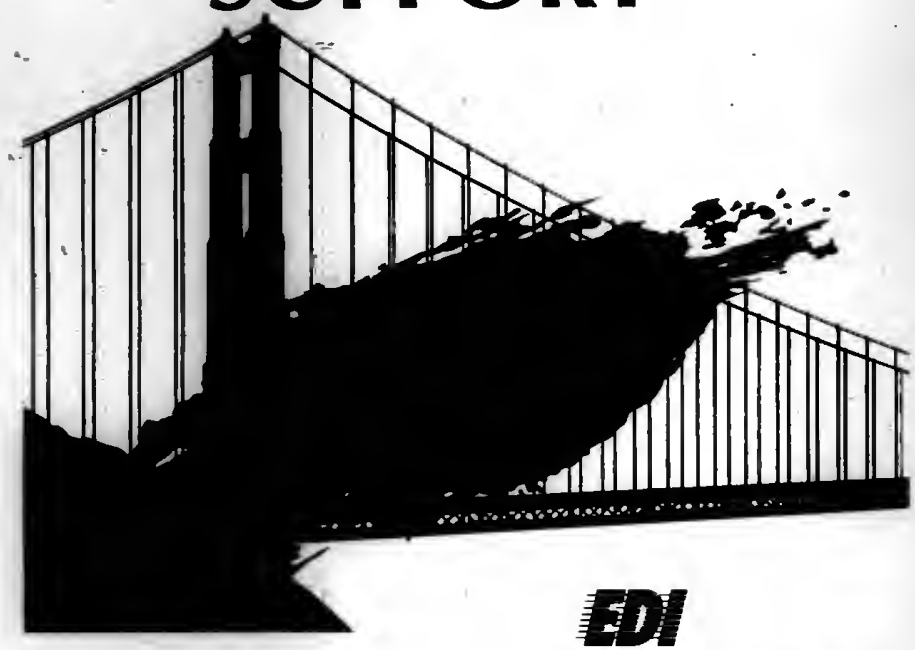
The host can support up to 32 users on dumb terminals from Wyse Technology, Inc. Unlike LANs that juggle complex network traffic generated by multiple smart PCs, VM/386 circumvents the interference generated by multiple interface cards. VM/386 MultiUser also allows users to designate an intelligent multiport serial board as a standard DOS port. Applications can then poll those devices — rather than PCs — for data, thus increasing system efficiency while reducing the amount of system hardware.

The result is access for more users and greater efficiency. Customers doing business in one department can make reservations in another. Staff members can check on room availability and waiting lists from anywhere on the premises.

Leeds is an old hand at the data management needs of those handling the animal kingdom. His father, Robert, started the 400-room American Pet Motels in Chicago, which also discovered another benefit of VM/386 MultiUser: financial analysis. American Pet employees can pull the numbers for boarding, training and shipping and see how much money customers are spending.

Leeds cited one instance in which American Pet managers assumed that the majority of their business came from the Yellow Pages. But a computer analysis proved that customer referrals were much more important. Armed with that information, they saved money by cutting back on advertising and moving toward direct mail and customer incentives instead, Leeds said.

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IN BRIEF

Tricord, SCO unveil Unix tool

■ **Tricord Systems, Inc.**, developer of the PowerFrame line of servers, and **The Santa Cruz Operation** (SCO) last week announced new Unix software for fault-tolerant operation. Tricord's $350 Unix/FT software shell, which operates on the PowerFrame server, can reportedly provide SCO Unix users with fault tolerance and performance features previously unavailable to them. Unix/FT is a software implementation of redundant arrays of inexpensive disks (RAID) Level 1 that allows SCO Unix users to configure disk drives into mirrored arrays for crash-proof operation.

■ A business agreement between **Hewlett-Packard Co.** and **IBM**, announced early this year, yielded its first product last week: an interconnect optical-link card that speeds visual data to desktop computers. Both HP and IBM plan to independently market the $495 HOLC-0266 card, which connects the motherboard or I/O channel card of a desktop workstation or personal computer to a fiber-optic cable for serial, point-to-point links of up to 2 km. The HOLC-0266 is the first tangible sign of February's development and marketing alliance between HP and IBM, which targets the market for high-speed communication linking technology.

■ **Bell Atlantic Business Systems Services** has announced nationwide support for IBM RISC System/6000 hardware and software in an expanded program that offers an alternative to IBM maintenance for the Unix-based workstation and server line. In addition to round-the-clock coverage, Bell Atlantic's program offers other options such as two-hour response, reduced coverage hours or next-day response. Bell Atlantic's service organization supports more than 500 computer brands, including Digital Equipment Corp. and Sun Microsystems, Inc.

Survey says HP preferred

BY MARK HALPER
CW STAFF

DELRAN, N.J. — A recent workstation user survey by market research firm Datapro Information Services Group showed that users have a slight preference for Unix boxes from Hewlett-Packard Co. over machines from other vendors.

The Datapro survey also noted that workstation owners planning future purchases prefer sticking with their current vendor, while users who are considering switching vendors are most interested in Sun Microsystems, Inc.'s Scalable Processor Architecture (SPARC) platform.

Datapro, based here, sent questionnaires to 2,730 workstation users that asked them to rate their brand satisfaction 1 through 5 — with 5 representing excellent — in a multitude of categories.

Datapro divided the categories into three main areas: usage, selection criteria and service/technical support.

HP's Precision Architecture-RISC-based 9000 series 700 models scored highest in usage and selection criteria, and they ranked second in service/technical support behind Intergraph Corp.'s InterPro line.

After receiving 591 valid responses, Datapro reported that the HP Model 700s outpointed rival brands in the usage category, with a rating of 4.01. Next, Inc. machines scored a close second at 3.95, followed by Sun's SPARCstation at 3.82 and Silicon Graphics, Inc.'s Iris workstation at 3.76.

Those products were followed, in order, by Intergraph's InterPro, Data General Corp.'s Aviion, Digital Equipment Corp.'s DECstation, IBM's RISC System/6000 and HP/Apollo's Model 400 series, which is based on Motorola, Inc.'s 68000 microprocessor.

User ratings included independent measurements such as CPU performance, reliability, X Window System performance and stability of the vendor's Unix implementation.

The HP Model 700s took top rankings in CPU performance, X performance and workstation reliability, while Next was tops in application development tools and graphics performance. Sun bested all others in the stability of its Unix implementation.

The HP Model 700s also won overall in selection criteria at 3.94, edging out Sun at 3.87 and Silicon Graphics at 3.72. Selection criteria measured factors including price, for which the HP 700s received the highest ranking, and software availability, a category in which Sun took top honors.

In overall service/technical support, users preferred Intergraph's InterPro workstations at 3.68, compared with 3.57 for the HP 700s.

Other survey findings included the following:

- 60% of the respondents are using their workstation in a client/server environment, and another 13% plan to implement a client/server architecture within the next 12 months.
- Price was the most important selection criteria.

DEC jumps on X.desktop bandwagon

BY MELINDA-CAROL BALLOU
CW STAFF

BOSTON — Digital Equipment Corp. users will soon have easier access to the Open Software Foundation's (OSF) Motif via DEC's upcoming support of IXI's X.desktop, a Motif desktop manager. DEC jumped onto an industry bandwagon of X.desktop supporters recently with plans to license it for packaging with future DEC hardware running Open VMS, Ultrix and the OSF/1 operating system.

Previously, DEC users accessed Motif via DECwindows, and the IXI offering will "fill a hole in DECwindows, which was the lack of a consistent desktop manager," said Steve Grass, a senior product manager at DEC. "We had the applications and runtime libraries and services, but we needed the glue to put them all together, which is what X.desktop brings us."



IXI's X.desktop *'fills a hole in DECwindows'*

DEC said it will also work with IXI to develop a Microsoft Corp. Windows New Technology version of X.desktop and integrate commonly used DEC applications with the desktop manager as a front end for Alpha and other environments.

X.desktop is a Motif-compliant, object-oriented desktop manager that is said to offer an easy-to-use, iconic view of files and programs. The ease-of-use feature was the primary draw for most of the vendors adopting X.desktop, industry analysts said, including IBM, The Santa Cruz Operation and NCR Corp.

The financial agreement between the two companies was not disclosed, but officials said it is part of a "multimillion-dollar deal" to install X.desktop in DEC workstations that will begin shipping during the first quarter of next year.

"Customers require an implementation of Motif that is easier to use [and] easier to access arcane, object-oriented technologies," said Steve Widen, a senior analyst at WorkGroup Technologies, Inc.

IXI and DEC will also focus on creating an easier way to access DEC's Application Control Architecture (ACA) Services for linking applications across heterogeneous networks and operating systems via objects. DEC's ACA is part of the Object Management Group's (OMG) Object Request Broker, and IXI officials said they expect that X.desktop will ultimately be fully compliant with the OMG standard.

IXI's X.desktop will be offered as part of DEC's Network Application Support (NAS) 250 software. NAS 250 will be included free when a system is purchased, DEC officials said. DEC is now offering X.desktop at a discount of $200 for the low-end DECstation 5000/25.

Token Ring lab to open

BY JOANIE M. WEXLER
CW STAFF

SANTA CLARA, Calif. — An independent laboratory where Token Ring vendors can test the interoperability of their 16M bit/sec. adapter cards on unshielded twisted-pair networks is slated to open next month on the Synoptics Communications Co. campus here.

Synoptics is a maker of enterprise and workgroup wiring hubs, which include modules supporting Token Ring local-area networks. As a founding member of the lab, the company is joined by Token Ring heavyweights IBM, Madge Networks, Inc., Olicom U.S.A., Digital Communications Associates, Inc. and Texas Instruments, Inc.

In addition, "98% of the Token Ring vendors are in discussion with us" about participation in the lab, said Peter Tarrant, group line manager of LAN connectivity at Synoptics.

In the lab will be a 144-node LAN — the size specified in the neophyte standard for the technology. This is a difficult and expensive configuration for vendors to build within the confines of their own walls, Tarrant noted.

The standard for running the higher speed Token Ring network over the lower grade lines is about 18 months from completion, even though industry leaders such as Proteon, Inc. have been offering the technology for nearly two years.

"Since these are still early days [for 16M bit/sec. Token Ring], there are many different implementations out there," Tarrant said.

Tarrant added that Synoptics has seen its customer demand for Token Ring products increase from 5% in the first quarter of 1991 to 20% in the first quarter of 1992.

Putting higher speeds over unshielded wiring "has been trickier" than the lower 4M bit/sec. Token Ring speeds, according to Mark Brooks, a senior LAN specialist at the Teachers Insurance and Annuity Association-College Retirement Equities Fund, a large Token Ring shop in New York. But while Brooks said he is considering switching Token Ring interface vendors away from IBM, "we're not that concerned with interoperability because we're trying to keep a pure environment" to minimize administrative headaches.

The lab follows in the footsteps of the Fiber Distributed Data Interface interoperability laboratories at Advanced Micro Devices, Inc. and the University of New Hampshire.

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NEW PRODUCTS

LAN software

Novell, Inc. has introduced v3.011, a five-user version of NetWare for the Apple Computer, Inc. Macintosh.

The product allows users on Novell's multiplatform NetWare Version 3.11 to get transparent integration for their Macintoshes, regardless of the number of users hooked into NetWare's services, according to the company. New features include print accounting, printer keeper, printer logs and hold queues. The option to cancel print job notification is included, and Simple Network Management Protocol is supported.

Pricing for the product ranges from $495 to $2,995, depending on the number of users.

Novell
122 East 1700 South
Provo, Utah 84606
(801) 429-7000

Net-Source, Inc. has released SilverNet 2.1 Peer-to-Peer Network Operating System for IBM Personal Computers and compatibles.

New features include SilverEMail, SilverChat and Interoperable SilverMessage, according to the company. Compatibility for Microsoft Corp.'s Windows 3.1 is also provided with SilverNet 2.1. The product is the only network operating system compatible with all versions of DOS, the company said.

Users can send and receive electronic mail over the network with SilverEMail. SilverChat is a messaging interface that communicates in real time, the company said. Pop-up messages can be sent to users with SilverMessage.

SilverNet 2.1 costs $99 per node.

Net-Source
Suite 101
1265 El Camino Real
Santa Clara, Calif. 95050
(408) 246-6679

Cabling

North Hills, Inc. has announced the availability of five of its six new Lobe Attachment Concentrators.

Connections for unshielded twisted-pair and shielded twisted-pair media over a local-area network are provided by LAC5501, LAC5502 and LAC5503, according to the company. The LAC5504 and LAC5506 supply connections for coaxial cable over a LAN. The LAC5505, which will be available later this year, provides fiber-optic cable. All of the products support controlled access unit technology and have the capacity to add as many as 20 workstations to a LAN.

The LAC5501, LAC5502 and LAC5503 are priced at $1,885. The LAC5504 and the LAC5506 are priced at $3,800. Pricing for the LAC5505 is not yet available.

North Hills
575 Underhill Blvd.
Syosset, N.Y. 11791
(516) 682-7700

Electronic mail

Release Management Systems, Inc. has released OmniTrans.

The product provides electronic data interchange (EDI) message-handling capabilities that allow users to translate any message from or to any standard, mix of standards or proprietary formats, according to the company. The translations are not hard-coded and can be updated to show changing communications or new application requirements.

Runtime prices range from $1,000 or lower depending on volume platform. Development system prices start at $19,500.

Release Management Systems
Suite 204
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Livonia, Mich. 48152
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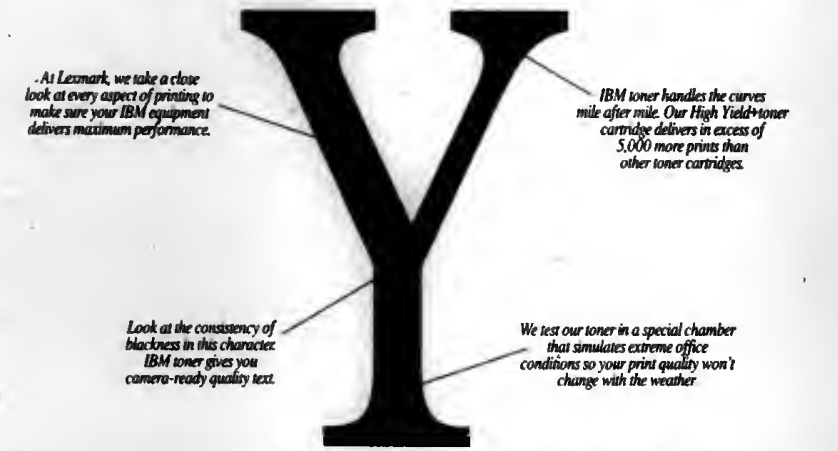
Digital Equipment Corp. has introduced DEC EtherWorks EISA TP/BNC, a network interface card.

DEC EtherWorks EISA TP/BNC was designed to connect personal computers using Extended Industry Standard Architecture (EISA) to ThinWire or twisted pair-based Ethernet networks, according to the company. The 32-bit card includes 128K bytes of random-access memory and has self-test firmware in an on-board, 16K-byte read-only memory. The product offers software drivers that support the Novell, Inc. NetWare ODI v3.11 server, MS-DOS client and OS/2 client, the company said.

DEC EtherWorks EISA TP/BNC costs $595.

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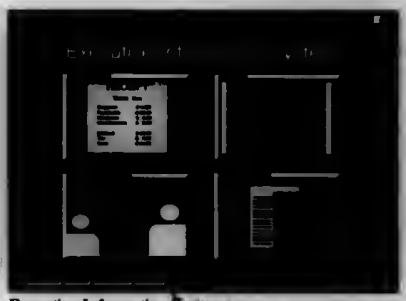
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The rough road to Vines

Banyan's updated network operating system delivers on promises, but not without some initial user hassles

NEW PRODUCT IN-SITE

Computerworld's New Product In-Site is an evaluation based on interviews with major users at corporate and educational installations. The product under evaluation is being used in a production environment running live applications.

BANYAN SYSTEMS, INC.'S VINES 5.0

- **Users are upgrading from Vines 4.11 to Vines 5.0 to stay current with the network operating system and to take advantage of its enhanced Macintosh compatibility, reworked file and print services and wide-area networking capabilities.**
- **Users are having difficulty installing and maintaining Vines 5.0. WAN connections have been difficult to establish; the new Macintosh file system has some bugs; and the new Vines File Store and print services require that previous file mappings be rearranged.**

Is any network upgrade worth the hassle? Driving most upgrades is the promise of a better day: better user and administrator services, better network throughput and better connectivity.

Banyan Systems, Inc. is making all of those promises about its latest network operating system, Vines 5.0. And indeed, network managers who have taken the plunge say they have gotten what they bargained for.

But, according to their reports, they have also confronted a battery of delays, detours and perils in their journey from Banyan's previous operating system, Vines 4.11.

For this evaluation of Vines 5.0, *Computerworld* worked with four corporate and educational sites that were in various stages of implementation.

Some had completed the entire procedure and were fully operational. Others were in the middle or late stages of installation and were working on problems of varying complexity.

The least complex tasks were simple upgrades from Vines 4.X to Vines 5.0 servers. After installing Vines 5.0, users reported that new network services such as added printer support and remote administration consoles were readily available. Further complexity was added when 4.X and 5.0 servers resided on the same network. In such cases, some adjustments were required on specific applications to accommodate the different facilities of each network operating system.

Adding Apple Computer, Inc. Macintoshes seemed to pose few problems, although users reported some remaining bugs in the native AppleTalk support.

Despite any complications or difficulties, all the users were satisfied that the upgrade was a wise move.

RELIABILITY

Evaluators had high praise for Vines 5.0's reliability. Three of the four evaluators had upgraded more than one server to Vines 5.0 and reported that no failures had occurred since installation. The manufacturing company reported that internetworking between two servers — one running Vines 4.11 — over a T1 telecommunications line had caused a number of problems, including the denial of access to all users on the Vines 5.0 server. Some of this it attributed to a hardware problem, but the difficulty remained unsolved at press time. Users who had both 4.11 and 5.0 servers on a single network had not experienced similar problems.

Manufacturer: "It's just continual downtime right now because I can't communicate with [the server running Vines 4.11.5]."

Educational: "I haven't had to do any administrative work for a server down."

Integrator: "We've had no failures that have impacted our operation."

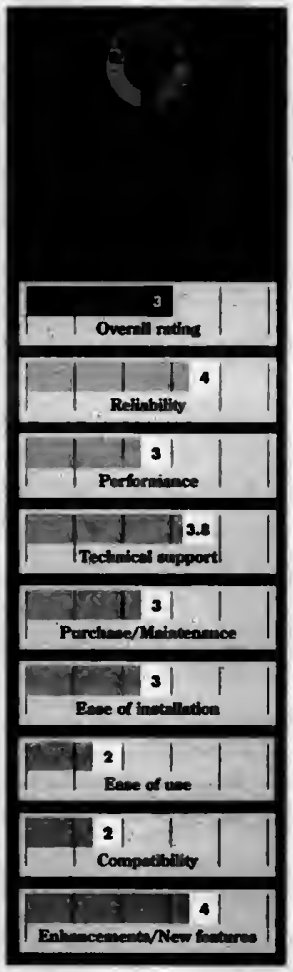
Telecommunications: "It has never failed. The things that have happened are minor."

PERFORMANCE

All evaluators found the performance of Vines 5.0 to be on par with previous versions. Despite a reworked file system that provides access to Macintosh files and richer control to system administrators over access rights, all users said that performance had not deteriorated from that of Vines 4.11.

None of the evaluators had run formal benchmark tests.

Integrator: "We have always found



INDUSTRY: MANUFACTURER

RATINGS	
Reliability	1
Performance	NC
Technical support	3
Purchase/Maintenance	3
Ease of installation	3
Ease of use	NC
Compatibility	1
Enhancements	NC
Overall	2.2

- **Hardware platform:** IBM PS/2; Syntrex 386-33
- **Type of network:** Token Ring
- **Number of users:** 120
- **Using previous version:** Yes
- **Applications:** Microsoft Windows and Excel, CAD, desktop publishing
- **Reason for purchase:** Ease of WAN connections to remote offices

INDUSTRY: EDUCATIONAL INSTITUTION

RATINGS	
Reliability	5
Performance	3
Technical support	2
Purchase/Maintenance	3
Ease of installation	5
Ease of use	2
Compatibility	3
Enhancements	3
Overall	3.3

- **Hardware platform:** IBM PS/2; Syntrex 386-33
- **Type of network:** Ethernet
- **Number of users:** 1,000+
- **Using previous version:** Yes
- **Applications:** E-mail, word processing, spreadsheet, database
- **Reason for purchase:** Macintosh connectivity

COMPUTERWORLD EVALUATION RESULTS

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Vines to be not necessarily the greatest speed demon. But performance, for the capabilities that it brings to us, is very acceptable."

Educational: "The benchmark is user input, and there have been no complaints."

TECHNICAL SUPPORT

This question refers to the amount of technical support needed to keep the network running smoothly. It indirectly points to the quality of the product from a support perspective.

Banyan 5.0 users rated the product at average to less-than-average for technical support.

Educational: "I was shipped a patch, and the patch outdated the software. When I patched the server, the clients could no longer use their software."

Telecommunications: "We've had situations where we were up the creek and [Banyan] dialed in [to our Vines 5.0 server] and installed a fix for us."

PURCHASE/MAINTENANCE

Users spent an average of about $8,000 upgrading from Vines 4.11 to Vines 5.0. They had previously spent up to $250,000 on servers and cabling to support their networks. In two cases — the educational institution and the integrator — the costs of the Vines 5.0 upgrade were significantly lower than average because of special pricing from Banyan.

Nonetheless, all users said that costs for the upgrade were about what they expected.

Manufacturer: Regarding Banyan's software-based wide-area networking modules, Banyan "makes it seem easy, but there is some hidden cost there." His installation required additional WAN modules.

INSTALLATION

Evaluators gave Vines 5.0 average to high ratings for single-server installations. In its documentation, Banyan said that installation to a single server requires 45 minutes, and evaluators called that a remarkably accurate estimate.

Getting that installation to function properly across multiple servers was another matter. In mixed environments of Vines 4.11 and Vines 5.0, users reported that file mapping had to be completely reworked to accommodate certain applications. The manufacturing company had not yet completed its plans to connect Vines 4.11 and Vines 5.0 servers over a T1 line.

Integrator: Installation "requires that your house be in order — in much better order than previous versions of Vines."

Manufacturer: "It was one of the fastest [installations] I've ever done."

EASE OF USE

In the eyes of network managers, Vines 5.0 is more difficult to use than previous versions. All evaluators said that was due to the increased range of functions provided with this version. All noted that establishing and administering the new file access rights and print services of Vines 5.0 was a more complex job than had been true in Version 4.11.

Educational: "The access rights are more difficult to manage, maybe because of the new types of files that [Vines 5.0] is allowing access to. There's more on the [administration] screen to manage."

Integrator: "It's much more difficult than previous systems, but only because it is more complex. You're going to find it more complex, at least until you get used to it."

COMPATIBILITY

Vines 5.0 has much less compatibility with previous versions of the operating system than evaluators had expected. Because of its enhanced functionality, they noted, some applications and services that worked in Version 4.11 will not work with Version 5.0. Remedying those incompatibilities requires a thoughtful evaluation of the services and functions required by each application.

Educational: "Everything went fine."

Integrator: "If you have a 4.11 client, there are certain functions you cannot do on a 5.0 server. We got around most of those problems."



Manufacturer: "I cannot communicate from two servers of different rev levels."

ENHANCEMENTS

The enhancements made to Vines 5.0 include better print services; robust control over file access rights; AppleTalk support; an improved file system that supports Macintosh and MS-DOS files; a remote console for network administration and more. Evaluators said they were impressed with the range of file and print services, which they noted had been lost in prerelease hoopla about Macintosh services.

Evaluators who purchased Vines 5.0 primarily for its Macintosh features said they got about what they expected.

Integrator: The new Macintosh features "tended to mask all of the other features and functions in 5.0. And so we found some nice things there that we had not necessarily expected."

Telecommunications: "We thought [Banyan] would have done the file services first, then the print services, then file access. When they all came together, we were surprised that they worked. We were more surprised that they worked together."

Reported by Michael L. Sullivan-Trainor and Garry Ray, CW staff.

BANYAN RESPONDS

Here's Banyan's response to the issues raised in this evaluation:

Why a new version: 5.0 is the next major release of native Vines. We've retained our integrated network services, so StreetTalk directory services are in there with a lot of enhancements. Network management services have been enhanced. Security, file, print services and client support are all in 5.0. We added a new client type — Macintosh support — and redesigned the file system (Vines File Store).

Macintosh integration: Our customer base reflects the marketplace — 18% to 25% of the desktops are using Macintosh. Those installations are buying 5.0 to get Macintosh client integration. New customers are being drawn to Vines because of the Macintosh client support. Other customers just want to protect their investment, and they're taking advantage of the upgrade program or of other features we've added.

Installation: This is the first time we've made such a major upgrade between the file systems. Essentially, we've rebuilt a lot of the product. People who start fresh with a 32-bit file system won't have a problem, compared with going from the previous 16-bit to 32-bit file system.

Ease of use: When you add a lot of functionality and enhancement, you try to keep ease of use in mind. A lot of what we did in the product — rewriting screens, providing installation from tape, the way we implemented different commands — we spent a lot of time streamlining. What we've heard isn't so much that it's difficult, but that it's new and they didn't do it before.

Wide-area connections: Most problems with T1 changes would be a third-party issue. Full T1 server-to-server fractional support is something we're looking at for future products.

Macintosh bugs: We've had no reports of major bugs, and some issues may be better referred to Apple.

INDUSTRY: TELECOMMUNICATIONS

RATINGS	
Reliability	5
Performance	NC
Technical support	5
Purchase/Maintenance	NC
Ease of installation	3
Ease of use	NC
Compatibility	NC
Enhancements	4
Overall	4.3

- **Hardware platform:** CNS 486
- **Type of network:** Token Ring, Ethernet
- **Number of users:** 60
- **Using previous version:** Yes
- **Applications:** Microsoft Windows and Excel, Lotus' 1-2-3 and Notes, OS/2
- **Reason for purchase:** Macintosh support

INDUSTRY: SYSTEM INTEGRATOR

RATINGS	
Reliability	5
Performance	3
Technical support	5
Purchase/Maintenance	3
Ease of installation	1
Ease of use	2
Compatibility	2
Enhancements	5
Overall	3.3

- **Hardware platform:** SystemPro, CNS 386
- **Type of network:** Token Ring, Ethernet
- **Number of users:** 65 locally
- **Using previous version:** Yes
- **Applications:** Borland's Paradox and dBase, Microsoft Windows
- **Reason for purchase:** Stay current with the product, better file system

METHODOLOGY: Product ratings and written information are based on the evaluations of four user organizations and product analysts who have extensive knowledge of the product. Each user has a version of the product installed at its site running production work loads. The material was gathered through written surveys and telecommunicating. The users are members of the Computerworld Product Evaluation Council. Ratings are based on user expectations on a scale of 1 to 5, where 5 is above expectations and 1 is below expectations. Ratings are presented in order of importance to users.
NC: No comment



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Boole tool offers help for distributed networks

Handles alerts in mixed-vendor environments

BY JEAN S. BOZMAN
CW STAFF

SUNNYVALE, Calif. — Corporate downsizing can create many islands of information that must be glued together by the enterprise network and monitored by central sites. That work is complicated by the fact that the largest information systems departments tend to be mixed-vendor shops.

In recognition of these two trends, Boole & Babbage, Inc.'s new Auto/Command product was designed to automate the control of distributed computers in an enterprise network.

Auto/Command, announced late last month, works with Boole's 2-year-old Net/Command product, which monitors distributed computers at 35 major sites worldwide. The new features can cut operating costs by reducing the number of network alerts demanding human intervention, Boole said.

Newfound freedom

One early user site, a Los Angeles branch of a large Fortune 500 company, found that Net/Command freed up operators from tending dozens of minicomputers. "People used to do health checks to make sure the applications were still running, that the networks were still running," said an IS manager at the site who preferred not to be identified. "We are looking for Auto/Command to do those health checks and then to initiate a recovery or bypass or network alert if something goes wrong."

Users will be able to write rules-based programs to monitor many kinds of proprietary and Unix minicomputers using IBM's Rexx fourth-generation language. The programs will change streams of ASCII data from the remote computers into a form that can be understood by the central site's Auto/Command console. Boole's Alert Logic Filter Editor feature will spot selected messages and react by sending out network alerts or by issuing a corrective command.

Observers said they expect Auto/Command to complement the movement to automated consoles at IBM mainframe sites.

"My company runs very lean," said Richard Antonini, computer resources manager at Stone Container Corp.'s Chicago headquarters. He installed Net/Command to track both IBM mainframes and Hewlett-Packard Co. HP 3000s last year.

"The automation process captures a lot of mundane tasks and lets the systems run themselves. That allows operators to become analysts who can dig into what's happening when something goes wrong," Antonini added. Stone Container, a $5.4 billion company, uses just two operators per shift at its Chicago data center.

Although Auto/Command issues network alerts, it has a different look and feel than IBM's NetView network management system, Antonini said. The Sun Microsystems, Inc. workstation that Stone Container uses as a Boole console has an icon-and-mouse system to move through windows showing all major sectors of the network. Icons in the shape of the company logo turn red when an alert is posted in a geographic region. IBM's NetView alerts can also be posted to the Net/Command console.

No rivals in sight

Industry analysts said Boole has few immediate competitors for its mixed-vendor automation tools.

"They are looking at the enterprise from top to bottom and moving toward management of a client/server network from a centralized command post," said Bill Strapko, a senior analyst at International Data Corp. in Framingham, Mass. Boole acquired the Net/Command product when it purchased Avant Garde Computing in 1990.

Although Boole may have a lead right now, that lead will not last forever, according to analysts. Computer Associates International, Inc. and Legent Corp. could also decide to adapt their IBM-compatible automated consoles for the Unix area, Strapko said.

Yet Paul Newton, Boole's chief executive officer, said he sees Auto/Command and Net/Command as catalysts for growth at his $100 million company. "Last year, our networking business was 7% of our revenue," Newton said. "This area could grow to be 30% to 50% of our business." Newton did not say how many years it would take for that product mix to be achieved.

Friendly's licks telecom costs

East Coast ice cream chain reaps double-dip benefits with new network

BY JOANIE M. WEXLER
CW STAFF

WILBRAHAM, Mass. — When Friendly Ice Cream Corp. realized that its annual telecommunications tab could potentially surge to $1 million by 1995, its information services department sought an alternative to the value-added network service it was using to communicate with 500 of its restaurants.

What the East Coast chain turned up was a sweet deal: a combination of third-party communications software and AT&T dial-up services anticipated to bring about an 87% reduction in annual transmission fees after a six-month payback, according to Andrew J. DeCusati, senior director of MIS.

Surprisingly, the cheaper scheme has not stripped the firm of functionality. Rather, the now-interactive configuration has provided Friendly's with the ability to remotely monitor and diagnose the network, update a restaurant's hard disk, download new menu prices and soon implement electronic forms distribution and messaging.

Pinching pennies

Part of the incentive for change was that the company's information systems expenditures — including more than $300,000 in yearly fees to network service provider BT North America, Inc. — did not cut it with the firm's relatively new, frugal owners, who bought the company in 1988 when it was losing money. Tennessee Restaurant Corp. purchased Friendly's, reduced personnel 15% corporatewide and issued a mandate that all departments work "smarter." This allowed "no chance of adding dollars to revitalize IS," said DeCusati, who arrived two years after the buyout.

An examination of Friendly's telecommunications setup revealed that the company could economically swap out its BT store-and-forward transport services for a combination of Xcellenet, Inc.'s RemoteWare Communications Management System and AT&T dial-up lines. The scheme included leveraging an existing T1 link between Friendly's headquarters here and its local central telephone office that was sitting virtually idle during off-business hours and using it for nightly polling.

The company launched the setup last fall when the BT contract expired, and DeCusati said he expects his yearly telecom fees to drop to $40,000. Friendly's installed the Xcellenet software centrally in under two man-weeks, he said.

Under the BT scenario, the network provider collected individual data files from each restaurant's local BT "mailbox," aggregated the data on its mainframe, converted it from ASCII to EBCDIC and then transported it to Friendly's headquarters each night over 9.6K bit/sec. leased lines, explained Paul J. Bronek, manager of Friendly's information center.

Now, headquarters polls the restaurants via the Xcellenet package, which works with Friendly's restaurant management software to ship sales, inventory, accounts payable and personnel data back to headquarters for quicker cash flow and sales analysis.

While the Friendly mainframe still houses the corporate Computer Associates International, Inc. IDMS database, it is now front-ended by two redundant IBM Personal Computer AT-bus Intel Corp. 1486-based clones running OS/2 that host the Xcellenet software.

DeCusati said his up-front, onetime costs for implementing the configuration comprised about $80,000 for the Xcellenet software and about $20,000 for the two PCs and 32 modems in the data center.

ON SITE

Friendly Ice Cream Corp.
Wilbraham, Mass.

- **Challenge:** To curb telecommunications costs spent on transmitting data between 500 restaurants and company headquarters under new ownership that slashed personnel counts 15% corporatewide.
- **Technology:** Replaced BT North America network services and reporting software with Xcellenet, Inc. communications software and AT&T dial-up services.
- **Bottom line:** Annual telecommunications charges expected to dive from $310,000 to about $40,000.



Andrew J. DeCusati

Here's the scoop

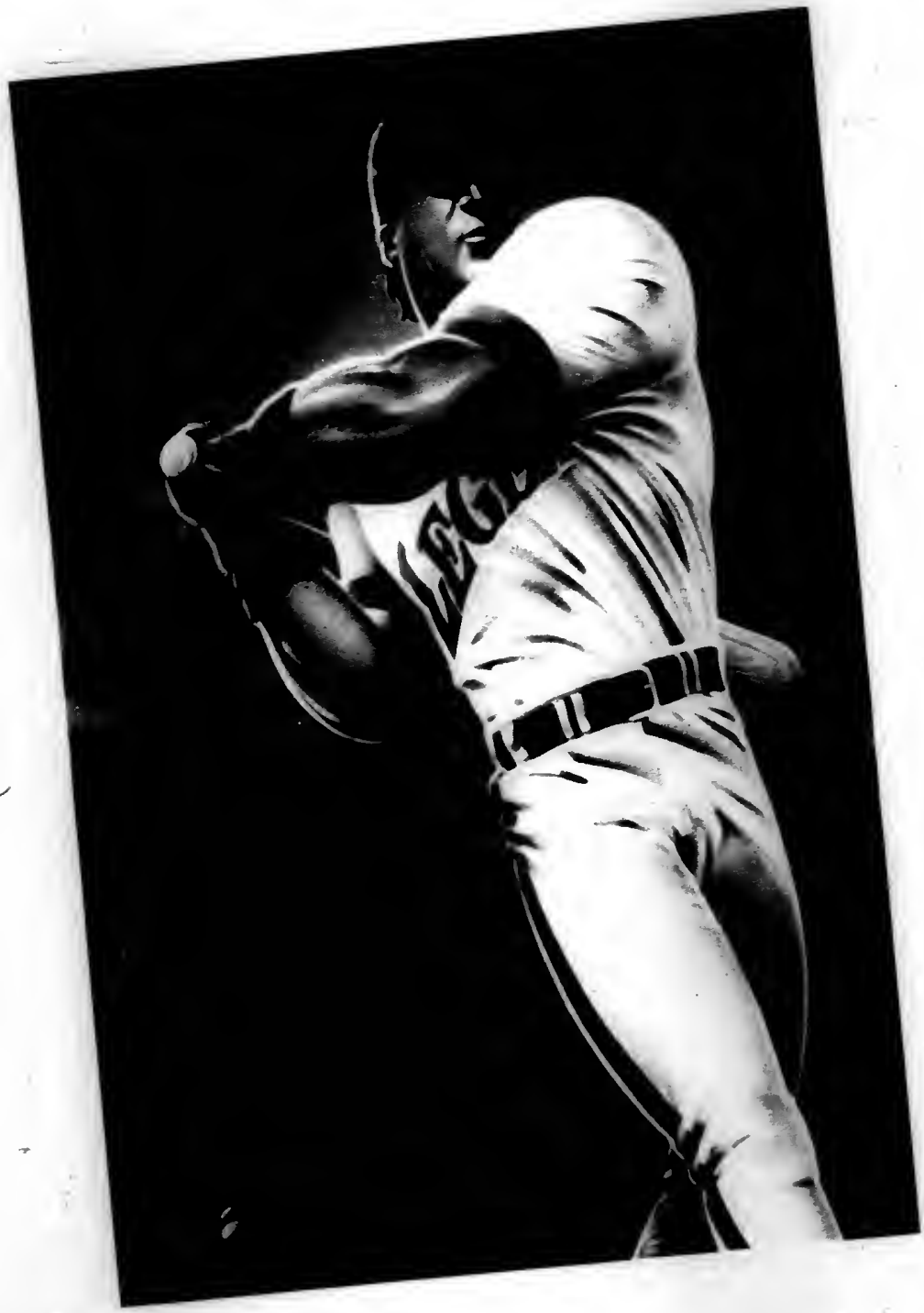
The next step for improving Friendly's IS infrastructure, said Andrew J. DeCusati, senior director of MIS, will be to "look at our point-of-sale gear and figure out how to use it to allow servers to spend more time on the floor."

This could include introducing wireless, handheld computers into restaurants for transmitting orders to in-kitchen workstations. This could speed up meal delivery and free up waiters to attend to customers, he said.

Currently, however, no appropriate handheld gear is on the market with enough storage for Friendly's 100-item menu. "Some are in prototype from companies such as Panasonic and Micros Systems, Inc., but so far they are cumbersome, expensive and have problems with communications," DeCusati said.

Friendly's would have to do some serious market research before initiating automated order-taking, he noted, because it would involve a re-engineering of how the company does business. "We don't know yet how people would react to us waiting on them with computers," he said. "After all, our name *is* 'Friendly's.'"

JOANIE M. WEXLER



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Find out how the game has changed. From the players who are changing it.

LEGENT

Wisdom of Salomon: Install a configuration tool

CLOSER LOOK
Configuration management systems

BY ELISABETH HORWITT
CW STAFF

Until about a year ago, administering the physical network at Salomon Brothers, Inc.'s New York headquarters was like trying to bring order to a bowl of spaghetti.

"Every desk here has at least four strands of fiber, and since we have about 4,000 people, that's lot of fiber," said Mark Sanders, vice president of network services at the investment firm. "What we found in the wiring closet was never in the documentation, so we would wind up installing new wires because it was cheaper than figuring out what old wires were for."



Syamken *wanted to design networks*

Salomon's situation is an extreme version of what a number of network managers are facing right now: the need to know who is using what on their networks so they can perform effective troubleshooting, inventory management, billing and support.

Salomon made order out of cabling chaos with the help of Command, a combination graphics/data-based network configuration management package from Isicad, Inc. in Anaheim, Calif.

A second company, The Graphic Management Group, Inc. in Valhalla, N.Y., offers two products with similar capabilities: Graphics Networker, based on DOS, and Aperture Networker, based on the Apple Computer, Inc. Macintosh. A Microsoft Corp. Windows version of Aperture is due out in the first quarter of 1993, Graphic Management said.

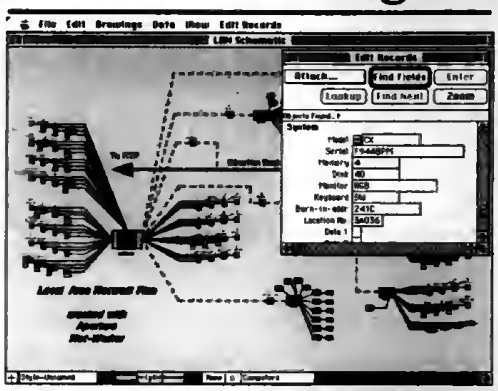
With these products, a graphical user interface depicts cabling and network configurations so devices, users, workstations and offices appear as icons on a topological map. By pointing to an icon, the user can call up records from the database that provide key information about the device, such as what version of software a workstation has installed, the vendors explained.

The products represent "a strong combination" for configuration management because users "can easily design the network, including all the physical cabling and devices that sit on it, while at the same time build a database of information, including inventory, attributes and all connectivity involved in the network," said Ginny Mellinger, a director at International Data Corp., a research firm in Framingham, Mass.

Users tended to agree. If Salomon had not installed Isicad's Command, the investment firm would now be spending millions of dollars a year to manage the millions of miles of cabling at its headquarters building, according to Sanders.

"I was looking for something I could use to design networks, both local and remote, that would also give me a look and feel for what we have in-house," said George Syamken, data communications manager at H. B. Zachry Co., a construction company in San Antonio. Graphic Networker "is as easy to use as I hoped, and it's helped me out big-time."

"You can click on a graphic, ask 'what is this?,' and [Aperture] gets the data from the database," said Mark Goldenberg, a systems support engineer with the antisubmarine warfare system division of Hughes Aircraft Co. "Or you can pull down the organizational database, ask the system to 'find all the people in this organization,' and it will highlight their locations on the drawing."





Graphic Management's Aperture *(top) and Isicad's Command enable the design and management of networks*

A major value of the products is their ability to support a variety of network administration applications, including inventory, billing, troubleshooting and design, users said.

Goldenberg's division originally bought Aperture to "know what's where," including computers, networks and cabling, across a 750- to 1,000-person facility, he said. "We very quickly found other uses for mixing graphics and data, such as keeping track of cables end to end and determining which signal goes on which pin on giant matrix panels."

In addition, Goldenberg, who is the primary personal computer support person for his division, can call up Aperture to find out the configuration of a system before he goes out on a trouble call.

"This saves me from having to gather the information when I get there and maybe having to go back to my office" to pick up a needed piece of equipment or software, he added.

Room for improvement

However, users said they see room for product improvement.

For example, Isicad user Avi Meir Lev, facility coordinator at U.S. Bancorp, noted that "the interface between database and graphics is adequate but a bit kludgey. The ideal would be that you pick something out on the map, like a workstation or user, move it [to another location on the map] and drop it down. That does not happen; you have to manually go in, undo and redo."

Isicad responded that it plans to offer a new version of Command in mid-1993 that allows users to pick up a piece of equipment and use a cut-and-paste graphics feature to instruct the system to change everything behind the scenes.

In addition, Goldenberg noted that he would like to see Simple Network Management Protocol support with the Aperture product, though Graphic Management said it has no plans to support the de facto standard at this time.

Vital statistics

Isicad's Command
Platform: Unix workstations
Price: $17,000 to $25,000

Graphic Management Group's Graphic Networker
Platform: PCs running DOS 3.0 and higher
Price: $2,495

Graphic Management Group's Aperture Networker
Platform: Apple Computer Macintoshes
Price: Aperture Professional — $1,995; Aperture Networker — $2,495 (includes: Aperture Professional application plus symbols for network devices, database structures, port structures and sample projects for managing computer network)

A tale of two vendors

Both vendors' product enhancement strategies focus strongly on their ability to exchange information with other vendors' systems. However, their tactics differ significantly.

Isicad

- **Direction:** Integrate Command with popular network management products via Simple Network Management Protocol (SNMP). Supported so far: Hewlett-Packard Co.'s OpenView Network Node Manager and Cabletron Systems, Inc.'s Spectrum.
- **To come, mid-1993:** A new version with The Open Software Foundation's Motif-like interface and integrated help-desk module, which will track moves, adds and changes and track problems through to resolution.
- **User response:** Mark Sanders, Salomon Brothers: "We hope to install the OpenView to Command connection in the next 18 months. Then, if the OpenView screen showed that a workstation had lost its connection to the network, operations people could use Command to pull up a trace of each circuit applying to that particular station."

The Graphic Management Group

- **Direction:** Provide a Microsoft Windows version of Aperture by early next year. An upcoming version of the Apple Macintosh version of Aperture, due out late this year or early next year, will be able to import data from other databases that conform to SQL or Apple's Data Access Language.
- **User response:** Mark Goldenberg, Hughes Aircraft: "Our telephone, network circuit, personnel, room and billing data are all mainframe-based. I have to have some of that data to see how well a network is going to function, so I download it from the mainframe and import it into the Aperture program. Eventually, I hope I won't have to import the data at all, just use the SQL hooks. . . . It would be nice if they got into SNMP on Windows."

NEW PRODUCTS

Network management

Independence Technologies, Inc. has enhanced its IView System Manager Software.

The IView System Manager monitors and controls software and hardware in networks that house products from multiple vendors, the company reported. New features include enhanced Alarm Forwarding, Distributed Management, Line Management and Dual Discovery. Users can purchase an option called Centurion that offers the same features and has a limit of 100 managed devices.

IView System Manager costs $14,500.

Independence Technologies
42705 Lawrence Place
Fremont, Calif. 94538
(510) 438-2000

Security Dynamics, Inc. has announced the ACE/Server for HP/UX, an access control software product for Transmission Control Protocol/Internet Protocol client/server networks.

The product supports Hewlett-Packard Co.'s UX operating environment. ACE/Server was designed to protect HP workstations from unauthorized users, the company reported. Network resources are protected and controlled, even if internal or external entry is attempted through a gateway, remote dial-up or direct connection.

ACE/Server for HP/UX starts at $5,000.

Security Dynamics
1 Alewife Center
Cambridge, Mass. 02140
(617) 547-7820

NetWorth, Inc. has announced HubView, a windows-based hub management application.

HubView fully integrates with Novell, Inc.'a NetWare Management System, providing a Microsoft Corp. Windows-based graphical user interface and port-level control for NetWorth concentrators and hubs. According to the company, the Simple Network Management Protocol allows users to enable and disable individual ports and configure automatically involved backup links for complete physical-layer fault tolerance.

Prices range from $2,000 to $4,000.

NetWorth
8404 Esters Road
Irving, Texas 75063
(214) 929-1700

WAN software

CrossComm Corp. has introduced the X.25 WAN module for its Ilan Universal Router.

The product uses Ilan's protocol-independent routing technology, which allows the X.25 module to route most protocols in the IBM/Token Ring environment over public or private networks.

According to the company, users can configure Ilan with X.25 and other combinations of local- and wide-area network modules to solve many internetworking challenges.

The X.25 module costs $950.

CrossComm
140 Locke Drive
Marlboro, Mass. 01752
(508) 481-4060

IN BRIEF

Carriers announce bandwidth tariffs

Several carriers recently announced tariff approvals or contracts in support of previously announced high-bandwidth network service offerings.

The flurry of activity underscores recent efforts by many carriers to get ahead of customers who are increasingly asking for high-speed facilities to support applications such as interconnected local- and wide-area networks capable of videoconferencing and high-volume imaging traffic.

■ **New York Telephone**, a Nynex Corp. subsidiary, said it had received approval from the state of New York's public service commission for its Integrated Services Digital Network (ISDN) Primary Rate Interface tariff. The telephone company has offered an ISDN basic-rate service, designed for Centrex service and single-line customers, since last April.

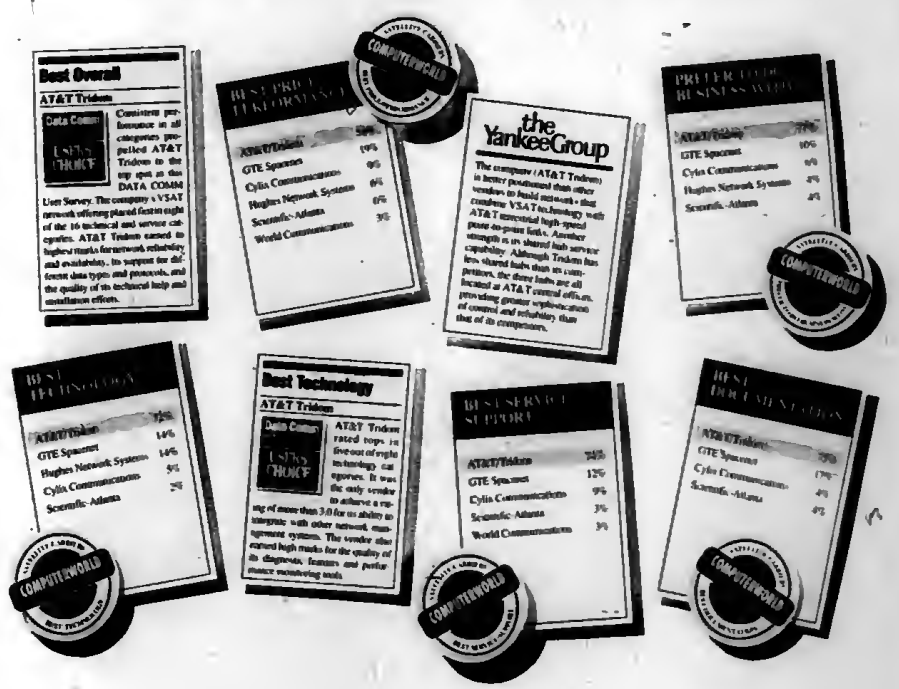
■ Furthering its Synchronous Optical Network (Sonet) deployment, **Pacific Bell** announced a three-year contract to buy broadband/wideband digital cross-connect and Sonet lightwave/multiplexing equipment from AT&T Network Systems.

■ **CompuServe, Inc.** announced it would remarket routers for Frame-Net, its nationwide frame-relay service. The company said it would offer products from **Cisco Systems, Inc.** in Menlo Park, Calif., and **Wellfleet Communications, Inc.** in Bedford, Mass.

■ **Pacific Bell** received a regulatory green light for its Switched Multimegabit Data Service (SMDS). Starting in September, SMDS will be offered at the DS1 rate of 1.5M bit/sec. throughout Los Angeles, San Francisco and Sacramento; a DS3 rate of 45M bit/sec. will be offered on a limited basis, according to Pacific Bell.

The telephone company is also testing a frame-relay service, which it plans to introduce next year.

What are VSAT users saying about AT&T Tridom?



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It shows in the 1992 *Users' Choice* survey conducted by *Data Communications* in which AT&T Tridom was voted the *Best Overall VSAT Vendor* with the *Best Technology.*

And it shows by what industry analysts are saying. A recent *Yankee Group* report lauded AT&T Tridom's shared hub service capability, technical superiority, and facility for combining VSAT technology with terrestrial data services.

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The safe route

There are many ways to decrease the time it takes to run utilities. Make sure you examine products carefully because you'll find that other vendors achieve speed at the price of dangerous integrity trade-offs.

Like all BMC products, REORG PLUS does not gain speed at the price of data integrity.

The speed and safety of REORG PLUS has been proven in some of the biggest production shops in the world. So, regardless of how large and complex your data becomes, REORG PLUS can efficiently handle it. REORG PLUS is an investment in not only speed, but safety.

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IBM Business Partner

Edwards to supply Mobil applications

BY MITCH BETTS
CW STAFF

WASHINGTON, D.C. — Mobil Corp., the giant oil company based in nearby Fairfax, Va., has taken another step in its standardization campaign by selecting a suite of business applications software from J. D. Edwards & Co. (JDE) to run on IBM Application System/400 minicomputers worldwide.

The value of the contract is $1.5 million for the initial phase and could grow to $10 million during the next five years, officials at Denver-based JDE said at a recent briefing.

Mobil will install JDE's financial, distribution and manufacturing software modules on a site-by-site basis, beginning with marketing and refining operations in Mexico, Colombia, Nigeria and Egypt.

Last year, Mobil selected the AS/400 as the standard hardware for its midsize operations around the globe, replacing a hodgepodge of IBM System/36s, Hewlett-Packard Co. and Wang Laboratories, Inc. minicomputers and personal computers.

"We're trying to clean up our act," said J. P. Bailleux, manager of systems and computer services at Mobil's oil marketing and refining division.

Global standardization

Through standardization of computing platforms, Mobil expects to gain efficiency in training and technical support.

"We hope that, eventually, the man transferred from Fairfax [headquarters] can walk into a Mobil office anywhere in the world and use the same kind of systems and software," Bailleux said.

"We're among the few companies that are truly standardizing across the world," he said.

After a rigorous study of the top AS/400 software vendors, Mobil settled on the JDE software because it met the users' functional requirements and because JDE has a network of support consultants in most of the foreign locales where the software will be installed.

Training and support are especially important for Mobil's operations in developing countries. "The system has to be sophisticated enough to run the operation," Bailleux said, "but not too complex for the local skills."

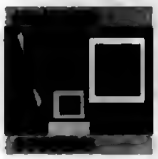
Indexing woes vex IS pros

Keeping track of scanned documents is imaging's unsolved dilemma

BY ELLIS BOOKER
CW STAFF

CHICAGO — On the cusp of achieving that long-sought goal of banishing paper records to the ash heap of history, some information systems professionals are nervous.

Their concerns can be summed up in a single word: indexing.



Bruce Silver, director of image management systems at BIS Strategic Decisions in Norwell, Mass., put it simply: "It's not a solved problem."

Most existing imaging applications follow the same process: A scanned image is presented to a clerical worker, who tags the image file to a database record. The database record is filled out with information about the record, including key words, and is then stored. Without the database record as a pointer, the image object, for all intents and purposes, ceases to exist.

"You can submit the image to [optical character recognition] and create a full-word index," Silver said. But describing the document's content for the index, he said, is still a labor-intensive duty beyond the capabilities of current systems.

Undoubtedly, this will be a job for future artificial intelligence engines, be added. Another promising solution may be standardized markup languages that describe a document's content at its creation (see story at right).

The worry over indexing is intensified by at least two other issues.

First, there is the realization that as paper documents are captured digitally, the amount of information maintained in electronic format will increase enormously.

By most estimates, less than 10% of the data currently handled by corporations and government agencies is in digital form. The vast majority remains, for now, on paper. It is no stretch of the imagination that as businesses continue to do away with paper they will, in exchange, have to manage databases containing tens or hundreds of millions of documents.

The second issue is more operational and addresses how imaging systems are currently being deployed.

According to many analysts, users of imaging have largely addressed departmental, rather than enterprisewide, issues. As a result, a single corporation with three imaging systems from the same vendor may find itself with three incompatible indexing schemes.

This is not a problem "until you want to connect systems," said Susan Cisco, who this year completed her doctorate in library and information science at the University of Texas at Austin after a three-year study of indexing as it relates to document imaging.

According to Cisco, if indexing issues are addressed "on the front end," disparate systems could be connected automatically. But Cisco's study, which concentrated on imaging in the pe-

Continued on page 56

Consider this

Before heaving millions of pages of correspondence and paper files into an electronic document imaging system, experts said, users should make the following preliminary assessments about the imaging system's all-important indexing scheme:

- **Will enterprise access be necessary?**
Most imaging systems deployed today are for departmental applications. Thus, indexes reflect the needs of individual departments. But if enterprise access is in the cards in the future, consider the needs of other users in other departments.
- **Will databases across departments be merged?**
Although two indexing schemes can be mashed together through interface programming after the fact, a far better approach is a common "data model" adhered to by all current and future applications.
- **Has the corporate records management department reviewed the indexing scheme?**
Imaging users often fail to consult in-house experts such as the corporate records department. This group may have valuable suggestions on the design of the index and may even know of relevant, emerging indexing standards.

ELLIS BOOKER

Survey pegs computer downtime costs at $4 billion

BY MELINDA-CAROL BALLOU
CW STAFF

Computer downtime cost U.S. businesses $4 billion, primarily through lost revenue, last year and occurred nine times per year in the average company, according to a recent survey of 450 information systems executives at Fortune 1,000 companies.

The study was funded by Stratus Computer, Inc. in Marlboro, Mass., and was conducted by the Strategic Research Division of Find/SVP, a research company based in New York.

Survey participants were asked about the costs and other impacts of computer system failures, and users from the following seven industries were interviewed: banking, securities, retail, manufacturing, telecommunications, health insurance and travel/transportation.

Industry analysts said that the results of the survey seemed reasonable, if a bit conservative, and that the survey highlighted a key issue for businesses not only in the Fortune 1,000 sector but also across the board.

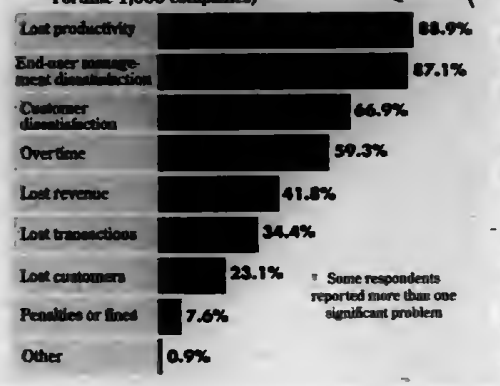
Users interviewed for the survey agreed. They said their businesses lost an aggregate $3.4 billion in annual revenue because of unplanned computer downtime.



Unhappy days

Some of the key problems related to computer downtime center on how upset people become

(Survey base: 450 IS executives from Fortune 1,000 companies)



* Some respondents reported more than one significant problem

Source: Stratus Computer, Inc.

CW Chart: Janell Genovese

The average revenue loss per hour of downtime was $78,191, with several companies reporting hourly losses of $500,000 or more.

Thumb-twiddling

Productivity costs associated with computer downtime indicated that it caused workers more than 37.3 million idle hours, which translated into $400 million in lost productivity last year.

When combined with the $3.4 billion in lost revenue, the total losses amounted to $4 billion, the survey concluded.

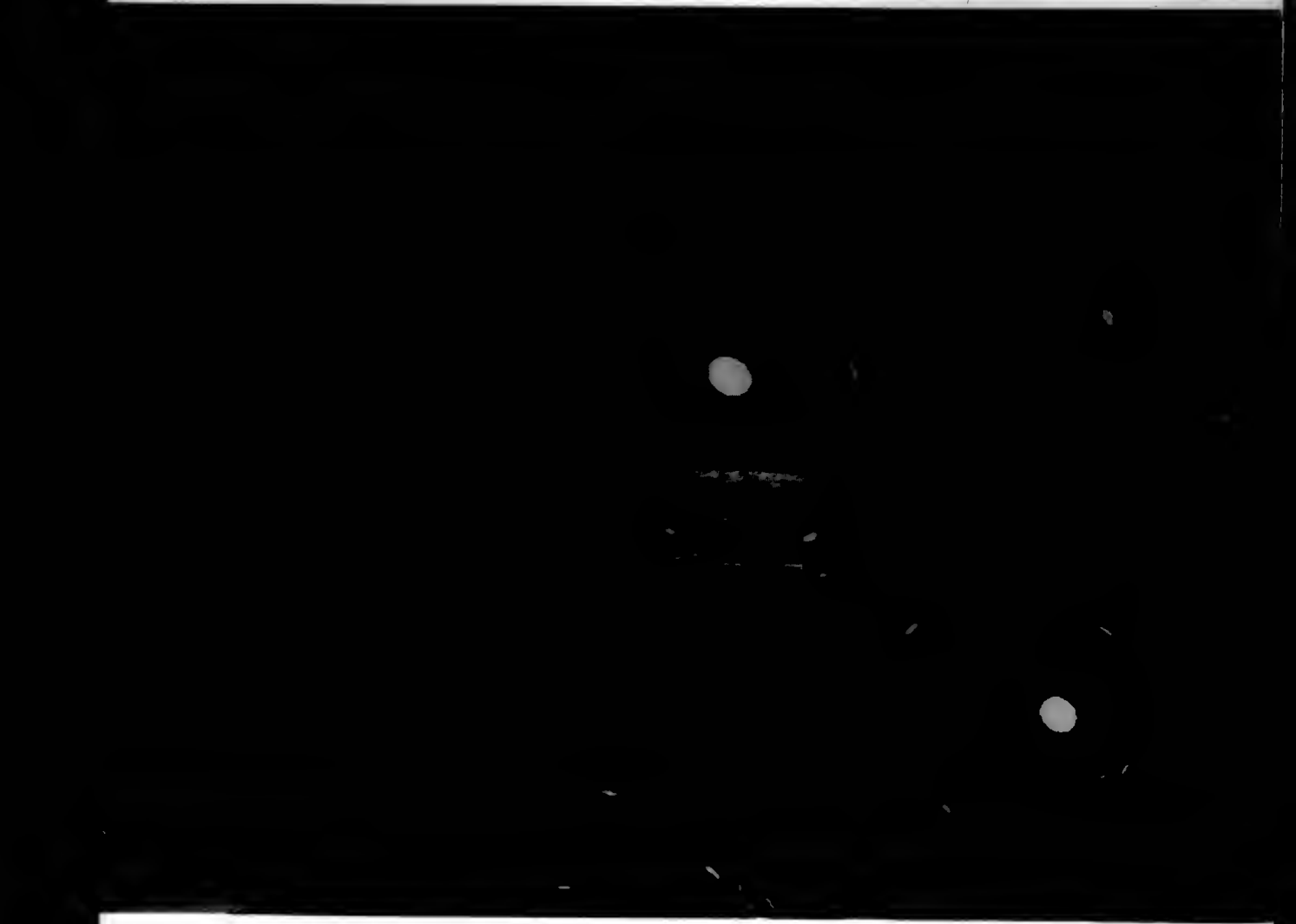
These figures did not include overtime costs, which were incurred by 60% of the responding companies, or customer loss, which affected 23.1%.

The survey also found that each time unplanned outages occurred, systems were down for an average of four hours.

Seventy-five percent of the

Continued on page 56

Bursting bubbles.



The computer that mad

The bubble in the middle doesn't really exist. It's just an image made from reflections of the sky, of the ground, of the other bubbles.

Only they don't exist either. The whole picture is a mathematical fantasy, and the giant computers that put men on the moon would have struggled to create it.

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We point this out, not to brag (well, maybe a little), but because the RISC System/6000 is fruit of IBM's huge investment in research, and it shows how our process is changing.

We spend over $6 billion a year on R&D, and we probably do more pure research than anyone. But lately, our top scientists work more closely with real products, and it helps. For the RISC System/6000, the man who pioneered its basic technology also led it to market. And the original lab team not only stayed with it, half of them moved from New York to Texas to join the development team.

As a result, our customers (often researchers themselves) can have massive computing power at affordable prices, to help them improve their own products.

But what hasn't changed about IBM research is the value of a person like John Cocke, who is one of 58 IBM Fellows. It's a title he earned by having great ideas, and it gives him the one thing he treasures most. Complete freedom to have more of them.

IBM®

BMC shifts strategy with new DB2 tool

BY JOHANNA AMBROSIO
CW STAFF

BMC Software, Inc.'s Change Manager, a new tool for users of IBM's distributed DB2 database management system, represents a strategy shift for the company.

"We've been providing tactical products for 12 years," said Max Watson, BMC president and chairman. A tactical product solves a specific problem and can be cost-justified in six to nine months. "Our long-term strategic direction now is to ensure that all of our customers' data in IBM mainframe databases will be available, reliable and synchronized.

Change Manager does both, he said, by not only solving "immediate heartburn" but also fitting into the longer term direction "for us and for customers."

Added to Alter

Change Manager is essentially an extension of another BMC product, Alter for DB2, which was introduced in 1987. Alter helps database administrators and programmers make changes to objects in a DB2 catalog. These objects can include tables, indices, views, storage groups and table spaces.

With Change Manager, customers can keep multiple DB2 catalogs in sync. It does not matter where the DB2 catalogs are, whether they are on different machines in various physical geographies or in different regions on the same machine.

At the heart of the new product is BMC's Change Definition Language (CDL), which helps programmers define what changes they want implemented in DB2.

The language is intended to be a user-friendly front end onto DB2's Data Definition Language (DDL) and is similar to an English front end masking the complexity of SQL, BMC executives said.

CDL still generates DDL, which DB2 requires, but it means less work on the part of the programmers.

Ed Chopski, a database administrator at CSX Technology in Jacksonville, Fla., has been field-testing Change Manager for several months. "We have three mainframes with four DB2 subsystems and keeping all the changes in sync can be quite a chore," he said.

Change Manager "takes the existing DB2 table, compares it to what you want it to look like and generates the statements to make that happen," Chopski added. He said that making changes takes about "half as long" as it took with Alter.

Positive feedback

Change Manager has been beta-tested at three sites, with about 45 customers placing orders, BMC executives said. The Fleming Cos., a grocery wholesaler in Oklahoma City, hopes to have Change Manager installed by the middle of the month, said Dorsey Douglas, a database administrator.

"We've been using DB2 for about 2 ½ years, and our applications are growing," he said. "We've had problems moving objects and data from one DB2 subsystem to another."

Fleming recently began using Alter as well. "In the old days it would have taken me four days to move 350 objects from one DB2 subset to another," Douglas said. "Now it takes me a half day, and I can spend my time doing more important things like working with developers and not being a clerk."

Pricing for Change Manager begins at $26,000.

Downtime costs $4 billion

CONTINUED FROM PAGE 53

respondents also indicated that downtime will become even more of an issue for them as their dependence on systems increases, and also as they become more reliant on data communications networks, which they noted would leave them more vulnerable to on-line system failures.

The study also found that systems downtime was caused primarily by failure of disk drives (26.4%), computer hardware (24.3%) and software (22.3%), with communications processors causing 10.8% and data communication networks causing 10.4% of failures. Human error was the least likely cause, according to respondents, with an occurrence rate of 5.9%.

The downtime concerns of users of fault-tolerant systems who were interviewed last week ranged from mission-critical applications and human safety on the part of air traffic controllers and highway dispatchers to a securities firm's sheer business necessity.

"Downtime is one of those things in the financial industry that just cannot be tolerated," said Simon Sarofsky, a vice president at Herzog, Heine, Geduld, Inc., an investment firm in New York.

Much at stake

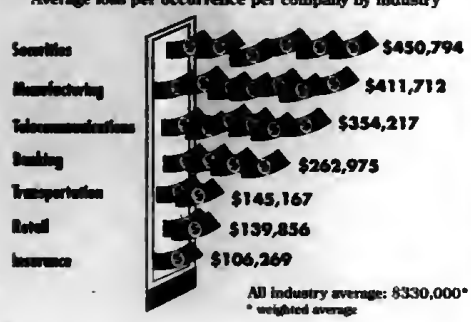
"We're talking about people's lives and public safety," said Leroy Siebert, assistant chief at the information management division of the California Highway Patrol, based in Sacramento.

"The issue for us was not so much the loss of revenue or number of shipments, more that [our applications are] mission-critical, dealing with security and safety," said Jim Fraser, the city of Houston's division manager for aviation IS.

In-securities

A computer outage is likely to cost a securities firm four times what it costs an insurance company

Average loss per occurrence per company by industry



All industry average: $330,000*
* weighted average

Source: Stratus Computer, Inc.

CW Chart: Janell Genovese

Indexing woes vex IS pros

CONTINUED FROM PAGE 53

troleum industry, found such planning to be the exception rather than the norm.

In addition, Cisco found that when it comes to creating an index for an imaging system, it is end-user departments that are calling the shots. Of 50 respondents to a questionnaire asking "who designed the index," 19 said end users.

"The salient point is the end users are driving not only the purchase of the imaging system but the indexing scheme as well," Cisco said.

Client-oriented

Connecticut Mutual Life Insurance Co. in Hartford, Conn., was one company that sought to avoid such departmental biases long before it began installing its first imaging application from FileNet Corp. two years ago.

"We decided several years ago to be client-oriented," Vice President Roger Thibodeau explained. A decade ago, he said, "contract policies" were the basic element of the company's IS. "If you had five contracts with us, we saw you as five customers," Thibodeau said.

That changed about five years ago, when the insurance carrier created a "client file" under IBM DB2 on its corporate mainframe. "When we introduced imaging, it was a natural for us to create an index for the image file [under the same DB2 resource]," Thibodeau said.

When agents log on to the mainframe, they see an "inventory" of all the documents in a client's folder.

Nevertheless, Connecticut Mutual's DB2 index of documents is not very detailed. "We don't define 'To' or 'From' on correspondence," Thibodeau explained. "You have to figure out the labor costs you incur by doing this sort of index, compared to the labor costs of infrequently going into the correspondence to find a particular document," he said.

Likewise, Thibodeau said he could not make a business case for scanning the 1.3 million paper file folders, representing every file contract in force at the time. "Sure, we went and took a look at what it would take to scan and index these 70 million documents. But we couldn't justify the cost," he said.

Instead, Connecticut Mutual put its money in making the DB2 index as flexible as possible.

Correct indexing is also critical in order to write associated records near each other on a single optical disc, the storage subsystem of choice for document imaging. This is because write-once read-many (WORM) optical drives have considerably slower retrieval speeds than magnetic disks or tape.

Elias Safdie, director of systems delivery at the DMR Group, Inc. in Boston, told the case of one automobile leasing company that filed its paperwork on a WORM chronologically. This worked fine unless records for one customer were spread among multiple optical discs.

"These guys didn't buy a jukebox, so the disks had to mounted by hand," Safdie said. "Eventually, workers found it quicker to go to the paper files."

A possible solution

If standardized indexing codes could be written at the time of the document's creation, everyone would save time and money.

This is the goal of markup languages, including the Standard Generalized Markup Language (SGML), an International Standards Organization standard. SGML has been given a boost by the government's Computer-aided Acquisition and Logistics Support initiative, which requires SGML.

SGML has benefits for both searching and displaying documents. Once titles, authors and other document elements are tagged in SGML, they can be searched for by the database. Also, a user interface can take the SGML tags and display them in a variety of ways, according to the user's needs.

Showing the value of SGML is the Core Project, an electronic-publishing experiment seeking to provide scholars with on-line access to all American Chemical Society journals since 1980, as well as chemistry abstracts. The project is a collaboration among Cornell University's Mann Library, Bellcore — which is translating the original typography files into SGML — the American Chemical Society, the Chemical Abstracts Service and the Online Computer Library Center, Inc., a nonprofit organization serving 10,000 libraries worldwide.

Dublin, Ohio-based Online Computer Library Center is building the database for searching the text and graphics. But the center's Stuart Weibel conceded that Core Project will work in part because "we're dealing with a much more narrow universe than a commercial business would have."

The complete Core Project database is expected to be mounted this fall.

ELLIS BOOKER

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☐ 9+ months ☐ No current plans

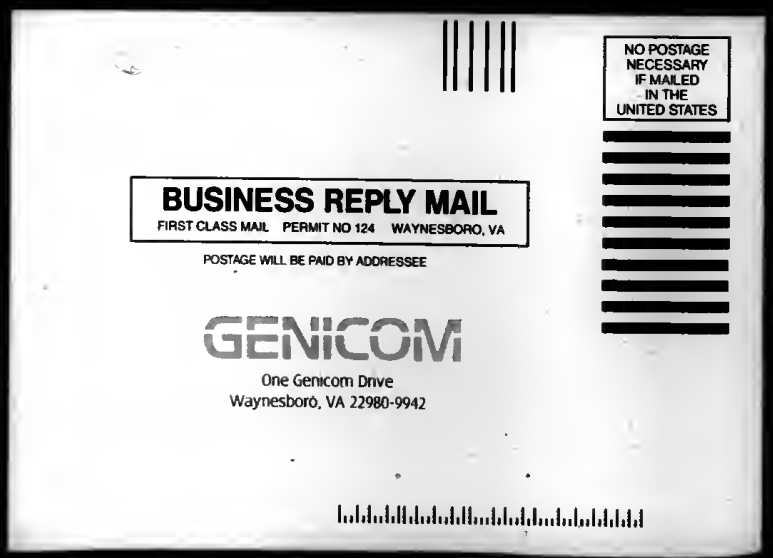
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Database management

Micro Data Base Systems, Inc. has announced the MDBS IV.

MDBS IV is a high-performance database engine used as a Novell, Inc. Netware Loadable Module. MDBS IV has an on-line transaction processing database management system that uses entity-relationship modeling and client/server architecture.

This version has a 300% improved speed over the MDBS IV DOS version, and the database server is fully 32-bit compiled and multithreaded. It can run with as little as 512K of random-access memory.

The MDBS IV starts at $7,000.

Micro Data Base Systems
2 Executive Drive
Lafayette, Ind. 47903
(317) 447-1122

System software

BMC Software, Inc. has announced Data Packer/OS.

According to the company, the product cuts direct-access storage requirements 60% to 90% without risking data integrity for MVS-based sequential and partitioned data sets. Data Packer/OS reduces the subsystem I/O load and elapsed time for sequential batch processing.

Features include a transparent implementation and a simulation mode to assess the impact of compression prior to actually compressing the data.

Data Packer/OS prices start at $7,500.

BMC Software
Suite 320
1 Sugar Creek Center Blvd.
Sugar Land, Texas 77478
(713) 240-8800

Kisco Information Systems has announced Squash Release 3.0, a source file compression program for the IBM Application System/400.

Enhancements include a recoded compression algorithm and improved access speed for the On-Line Archive feature. Release 3.0 of Squash allows source files to be reduced by 75% to more than 90%. It then returns that disk space for other use.

The program source code in the source files that the AS/400 stores takes up more disk space than is necessary. With Squash, users can store programs in a compressed format, providing more disk storage space.

Squash has a onetime license fee of $500 per machine.

Kisco Information Systems
Suite 121
120 Beverly St.
Mt. Kisco, N.Y. 10549
(914) 241-7233

IBM updates RISC family

IBM has announced a new family of reduced instruction set computing-based System/88 fault-tolerant computers, which double the power and improve price/performance over earlier versions of the product, according to IBM officials.

The computers operate with matched or duplexed pairs of processors and other hardware components and are repackaged versions of the X/AR systems from Stratus Computer, Inc., which were announced last month [CW, July 20].

The new machines are available with 32M to 512M bytes of duplexed memory and support up to 105G bytes of duplexed direct-access storage, officials said.

IBM also announced a 1.46G byte disk drive for the System/88 direct-access storage device (DASD) subsystem.

The new entry-level 4596 Model 229 is priced less than the current entry-level 4576 Model 910 but offers twice the performance, IBM officials said.

Prices for the 4596 models range from $119,000 to $337,900, and all models are expected to ship by December. The System/88 DASD subsystem will be available by the end of this month.

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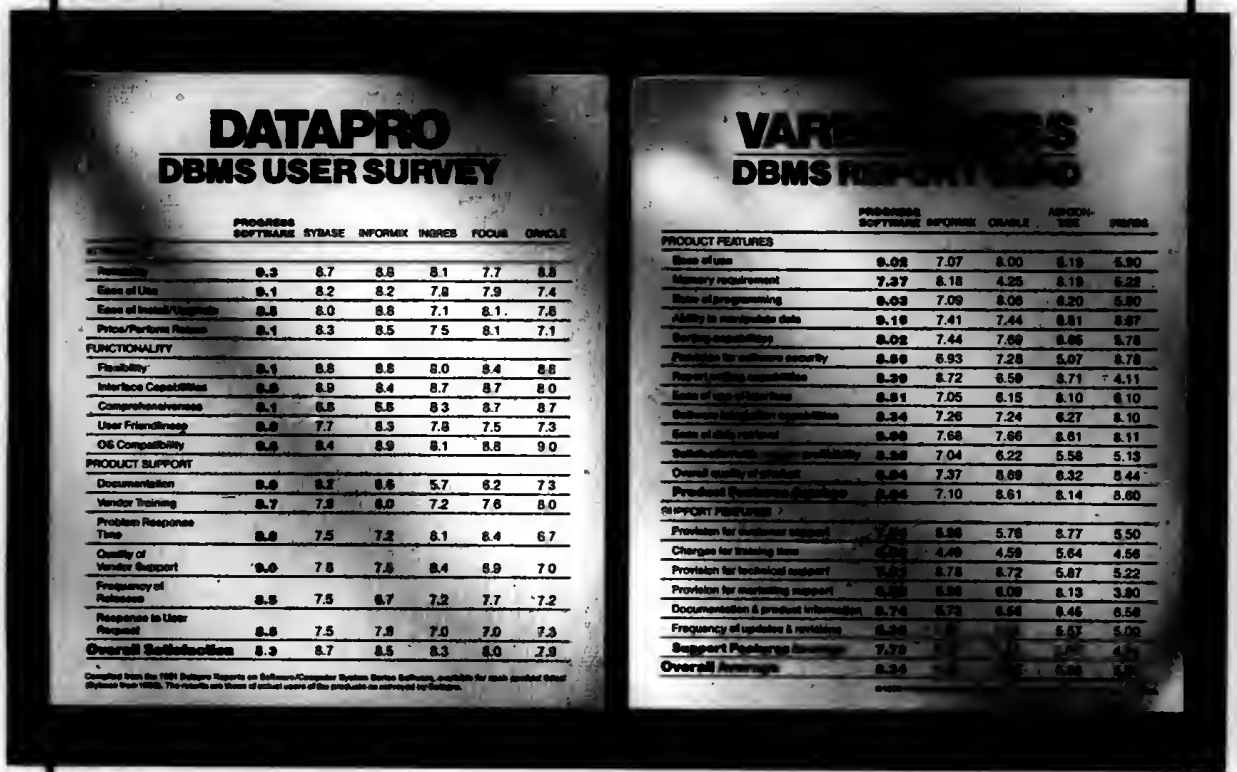
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	PROGRESS SOFTWARE	SYBASE	INFORMIX	INGRES	FOCUS	ORACLE
Reliability	9.3	8.7	8.8	8.1	7.7	8.8
Ease of Use	9.1	8.2	8.2	7.8	7.9	7.4
Ease of Install/Upgrade	8.8	8.0	8.8	7.1	8.1	7.8
Price/Performance	8.1	8.3	8.5	7.5	8.1	7.1
FUNCTIONALITY						
Flexibility	8.1	8.8	8.8	8.0	8.4	8.8
Interface Capabilities	8.6	8.9	8.4	8.7	8.7	8.0
Comprehensiveness	8.1	8.5	8.5	8.3	8.7	8.7
User Friendliness	8.0	7.7	8.3	7.8	7.5	7.3
OS Compatibility	8.6	8.4	8.9	8.1	8.8	9.0
PRODUCT SUPPORT						
Documentation	8.0	8.2	8.6	5.7	6.2	7.3
Vendor Training	8.7	7.9	8.0	7.2	7.6	8.0
Problem Response Time	8.6	7.5	7.2	8.1	8.4	6.7
Quality of Vendor Support	9.0	7.8	7.5	8.4	8.9	7.0
Frequency of Releases	8.5	7.5	6.7	7.2	7.7	7.2
Response to User Request	8.6	7.5	7.8	7.0	7.0	7.3
Overall Satisfaction	8.3	8.7	8.5	8.3	8.0	7.9

Compiled from the 1991 Datapro Reports on Software/Computer System Series Software, available for most standard Local Systems from Vendor. The criteria are those of actual users of the products as surveyed by Datapro.

VAR[illegible]
DBMS [illegible]

	PROGRESS SOFTWARE	INFORMIX	ORACLE	ADABAS/NATURAL	INGRES
PRODUCT FEATURES					
Ease of use	9.02	7.07	8.00	8.19	5.90
Memory requirement	7.37	8.18	4.25	8.19	6.22
Ease of programming	9.03	7.09	8.08	8.20	5.90
Ability to manipulate data	9.19	7.41	7.44	8.81	6.67
Sorting capabilities	8.02	7.44	7.69	8.85	5.78
Provision for software security	8.56	6.93	7.28	5.07	6.78
Report writing capabilities	8.39	8.72	6.59	8.71	4.11
Ease of use of interface	8.81	7.05	6.15	8.10	6.10
Software integration capabilities	8.34	7.26	7.24	6.27	8.10
Ease of data retrieval	8.98	7.68	7.66	8.61	8.11
Software with major portability	8.58	7.04	6.22	5.56	5.13
Overall quality of product	8.84	7.37	8.09	8.32	5.44
Product Features Average	8.64	7.10	8.61	8.14	6.66
SUPPORT FEATURES					
Provision for customer support	7.84	5.98	5.76	8.77	5.50
Charges for training fees	[illegible]	4.49	4.59	5.64	4.56
Provision for technical support	7.83	8.78	8.72	5.87	5.22
Provision for marketing support	8.49	5.96	6.09	8.13	3.80
Documentation & product information	8.76	8.73	8.56	8.46	6.56
Frequency of updates & revisions	8.56	[illegible]	[illegible]	5.67	5.00
Support Features Average	7.79	[illegible]	[illegible]	[illegible]	4.81
Overall Average	8.34	[illegible]	[illegible]	6.98	5.5[illegible]

Rated on everything from performance and reliability to service and support, PROGRESS trounces all of its competitors in the 1991 Datapro user surveys and the 1991 VARAUSINESS Software Report Card.

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PROGRESS
SOFTWARE

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CPWADV0610

IN BRIEF

Object technology invasion

Object-oriented technology will seep into information systems shops in three phases during the next several years, according to a survey conducted by **Forrester Research, Inc.** The Cambridge, Mass.-based market research firm discovered that companies will manage the massive reorientation that object technology requires by first retraining the development staff during the next two years. Then users will try new tools in self-contained workgroup applications, after which users will embrace object-oriented development corporatewide by the late 1990s, Forrester said.

LBMS, Inc. released Systems Engineer Version 4, an upgrade to the Houston-based company's Microsoft Corp. Windows-based integrated computer-aided software engineering tool set. It is priced at $5,000 for the workstation and $7,500 for the repository.

Unix development tool maker **Suite Software** in San Francisco is shipping SuiteDome, a tool that was designed to let users build and run distributed applications across multivendor networks.

SuiteDome, priced from $2,500 to $75,000 per node including a class object library, supports **IBM, Hewlett-Packard Co., Digital Equipment Corp. and Sun Microsystems, Inc.** workstations.

DOS-, IBM OS/2- and **Microsoft Corp.** Windows-based application development tools from **Micro Focus, Inc.** are now available to the **U.S. Postal Service** via the Microcomputer Software Acquisition Project contract that was recently awarded to **General Technology.**

Graphical look gives PG&E a fresh start

BY CHRISTOPHER LINDQUIST
CW STAFF

Find someone who is learning to read. Hand him copies of *The Wall Street Journal* and *USA Today*. Which do you think he will look through first? He will probably go immediately to the one that is easier to read, more colorful and more inviting.

The same holds true for the difference between a DOS prompt and a graphical user interface (GUI). Simply dropping personal computers in front of users does not guarantee productivity gains. If the users are intimidated, just the opposite may occur. To be effective, they must feel that the PC is another tool for doing their jobs. That was a lesson learned by Pacific Gas & Electric Co. (PG&E) that caused the utility to rethink its approach to the delivery of information technology.

"We actually had a vision several years ago of trying to move us to an on-line enterprise," said Arthur Beckman, manager of information technology services at PG&E. "We started trying to implement that, and we were quite a ways down the path, and we said, 'Boy, it really isn't meeting the true needs of the people.'"

Complicated ingredients

That realization changed PG&E's focus from becoming an "on-line enterprise" to being an "empowered enterprise." But while being on-line was primarily a technology issue, empowerment is equally split into technological and cultural parts. And converting either part is no small task when you manage more than 20,000 PCs.

A big portion of the technological side of the equation is GUIs and the advent of PCs that are powerful enough to make them feasible. At PG&E, Microsoft Corp.'s Windows 3.1 running on Intel Corp 80386- and 1486-based machines provides a common look and point-and-click simplicity to a wide variety of applications — both third-party and those developed in-house.

The user reaction to a graphical environment was heartening. As an example, Beckman pointed to a character-based payroll system that "people hated." The system is now being converted to a fully graphical Windows environment that presents a representation of an actual time sheet.

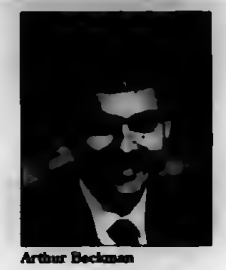
"The metaphor which they're used to dealing with in the paper form is now in electronic form," Beckman said. He added that he has been to prototyping sessions for the new system where clerks who "would sit there and tell you how they hate the thing, within five minutes are telling you, 'God, this is great!'"

Mass appeal

Indeed, users found the new technology so appealing that PG&E nearly doubled its original estimates of how many graphical workstations would be converted in the first year, raising the total from 4,000 to nearly 9,000. "That was definitely because people really wanted this stuff," Beckman said. "There was a definite pull going on out there."

But while new technology can make a system more inviting, it takes people to spread the word about what is available and to convince others that something is worth trying. As a result, PG&E has devised various ways to familiarize users with technology and bring information systems out of the back room.

ON SITE



Arthur Beckman

Pacific Gas & Electric
San Francisco

- **Challenge:** To enable some 25,000 end users to more effectively use computer technology in their jobs.
- **Methods and technology:** 386- and 486-based user workstations running Microsoft's Windows along with a wide variety of Windows-based applications and development tools. Internal trade shows used to familiarize users with the products and services available to them.
- **Results:** Users are able to visualize and execute computerised solutions to company problems. Users also feel closer to the process and the IS department.

The IS department makes presentations to other departments on an almost daily basis. Videos describing the uses of new technology are available, and users are encouraged to take part in testing programs for new products. Open houses allow users to meet IS personnel and see demonstrations of the latest available technology.

A noble ambition

All this is done with the goal to "get [technology] in front of people so they can use it as they would any other tool," Beckman said.

The tactics seem to have worked. Several user-initiated and even user-developed projects have been completed, and more are under way. Among them are an electronic bulletin board system that is used to buy and sell natural gas and an accounting and budgeting system that gives local foremen immediate access to detailed, current information about their operations, rather than the 6-week-old information that used to be circulated on paper reports.

Still, Beckman said, he is not trying to turn his users into programmer/analysts. Instead, "we are trying to put a suite of end-user tools in front of them where they can do this type of thing," he said. "We provided the tools and the infrastructure so that people can be picking things off the shelf to help them be more competitive in their job."

And if the users are more competitive in their jobs, the company can be more competitive. "Employees and the enterprise as a whole really are using information technology aggressively and competitively on behalf of the company," Beckman said.

Oracle set to release graphical tool suite

BY JEAN S. BOZMAN
CW STAFF

REDWOOD CITY, Calif. — Oracle Corp. has been on a product kick this summer, introducing its Oracle 7 relational database on June 15 and both a secure database and a revamped suite of financial applications last month. Yet one more shoe is about to drop: a suite of graphical development tools.

According to users, the new tools may be demonstrated at the International Oracle Users Group meeting scheduled for next month in San Francisco. Actual delivery is expected sometime next year.

User and analyst sources said the product family is composed of several elements, including the SQLForms 4.0 application developer, the SQLReport-Writer 2.0 report generator and the underlying graphics technology called Toolkit 2.0.

Users of the current SQLMenu front end for developers will find that it will be rolled into SQLForms 4.0 and will not continue as a separate product, sources said.

Oracle's application development tools are used at most Oracle database sites, although a significant percentage have third-party tools from Powersoft Corp., Uniface Corp., Progress Corp., JYACC, Inc. and other companies.

Waiting game

Many users seem willing to wait until next year for the new tools, primarily because they can start Oracle 7 database application work today with SQLForms 3.0.

"It's going to be real nice to have the new features, but you don't have to have all that graphical stuff to fill a database field," said Warren Capps, director of Oracle systems at STR Corp. in Reston, Va.

At least one top Oracle executive confirmed that the tools introduction will cap a makeover of the entire product line.

"We're going to roll out new versions of virtually every product we have," said Jerry Baker, vice president of Oracle's Product Lines Division.

During the next 12 to 18 months, Baker said, product shipments will include SQLForms 4.0, SQLReport-Writer 2.0, an end-user tool for viewing networked databases called Browser 1.0 and a group authoring package called Bookviewer 1.0.

Whenever the suite is released, it may be the last product splash that Oracle makes for some time.

COMMENTARY

Sesha Pratap

Recycling software



Many software development organizations are adopting object-oriented techniques and technologies in the hope of increasing software reuse.

Software reuse will increase as software groups move to component-based development and begin to use interactive programming environments to aid in the transition.

Traditional programming

The traditional unit of most software development is the file. Program code and data contained in collections of files are compiled and linked together to form a complete program.

Debuggers are used to control the execution of the program and to examine the state of the program when it is stopped.

Compilers and debuggers support a static, file-oriented model of development where the unit of execution, testing and debugging is the complete program.

But the model presents several obstacles to effective software reuse. First, it makes it difficult for programmers to prototype and experiment with reusable software components by requiring a complete program for execution and debugging.

The file-based model also does not encourage programmers to develop reusable software because it is very difficult to isolate and work with subsections or components of a program.

Since programs are physically linked together, software reuse is also impaired by the dependencies that creep into a program.

These dependencies are difficult to avoid and isolate because the code for a component or collection of components can be distributed over several files and can have dependencies to many other program and system files.

Component-based development

Naturally, the key to software reuse is that software be developed using reusable components. These programs would consist of individual components that are linked together to create an application. A component is a stand-alone entity that performs a service by receiving and sending messages or information along with other components.

Component-based programming shifts the development process from creating a single, linked program to reusing existing components and assembling a program in an incremental, iterative manner. The development process of writing, executing and debugging code happens with individual components instead of with a compiled program.

Unfortunately for software development organizations, a computing environment that will support component-level development is several years away. This computing environment would consist of an object-oriented operating system, an object request broker and standard components to provide system services. The only computing environment that contains these capabilities today is the NextStep environment, which provides a proprietary object-oriented environment with many reusable components.

SINCE PROGRAMS ARE physically linked, software reuse is also impaired by the dependencies that creep into a program.

Interactive programming

In the absence of standard, widely available object-oriented computing environments, software developers can improve software reuse by using interactive programming environments that support component-level development.

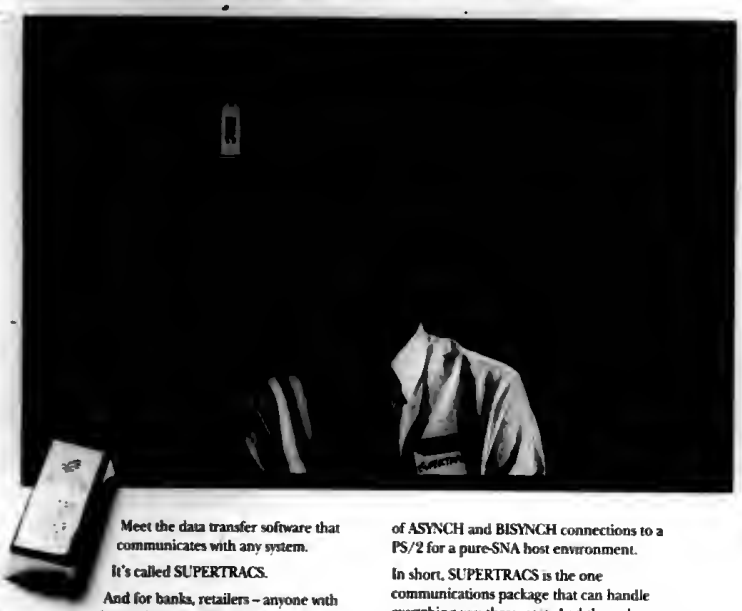
In order to support component-level development, a programming environment must offer the ability to execute, test and debug individual code fragments or objects. Also, the environment should provide work space for creating new data and objects interactively. Interactive programming environments (IPE) have been used for languages such as Lisp and Smalltalk and are now available for languages such as C and C++.

IPEs allow programmers to write, execute, test and debug code fragments without requiring a complete program. Programmers can experiment directly with class libraries and existing software components to better understand how these objects can be used.

Software reuse can be greatly improved if developers can adopt a component-based development model. In the absence of an object-oriented computing environment that supports component-based development, programmers can improve software reuse by using programming environments that support component-level development.

Pratap is president, chief executive officer and cofounder of Centerline Software, Inc. in Cambridge, Mass.

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NEW PRODUCTS

Application development tools

Matesys Corp. has introduced a new version of ObjectView 2.0.

According to the company, ObjectView 2.0 is a professional development tool that supports every aspect of a client/server development project.

The product can support industry-standard programming languages, which enable users to build complex applications. New features include a debugger, object data dictionary and open architecture.

ObjectView prices range from $999 to $2,999.

Matesys
Suite 175
900 Larkspur Landing Circle
Larkspur, Calif. 94939
(415) 925-2900

Bristol Technology, Inc. has announced HyperHelp 2.0.

Designed for OSF/Motif and OpenLook, HyperHelp 2.0 is a hypertext-based facility. New features include an OpenLook Viewer, PostScript printer support, FrameMaker file support and multimedia capability.

Other key features include a single function application programming interface and the ability to perform full text searches.

HyperHelp 2.0 costs $4,000 for a binary license and $25,000 for a source-code license.

Bristol Technology
898 Ethan Allen Highway
Ridgefield, Conn. 06877
(203) 438-6969

Arnet Corp. has introduced the Arnet OS/2 device driver, a product that conforms to the Asynchronous Communication Device Interface OS/2 Extended Edition 1.2 standard from IBM.

Programs written in languages such as C/2, Macro Assembler/2 and Pascal/2 gain access to the driver via the Asynchronous Communication Device Interface. Application programs using the device driver can access Arnet's MultiPort serial port boards, providing additional communications port devices for up to 32 ports in a personal computer, the company reported.

Prices start at $269.

Arnet
Suite #6
618 Grassmere Park Drive
Nashville, Tenn. 37211
(615) 834-8000

Better CASE translation

A new application development framework could ease the woes of those seeking to integrate disparate computer-aided software engineering (CASE) tools.

Called Toolbus, the CASE integration platform from The Barton Group in North Andover, Mass., uses a proprietary "model mapping system" to translate data from various CASE tools into a common file format, according to company officials. Once done, these information models can be shared among all tools residing on the Toolbus platform. The system also allows migration of existing CASE models from one tool or repository to another, they said.

Shipping since early July, Toolbus works with a oumber of CASE products, including those from Bachman Information Systems, Inc., KnowledgeWare, Inc., Popkin Software and Systems, Inc., and Texas Instruments, Inc. Platforms include IBM's MVS, VM and OS/2 and Digital Equipment Corp.'s VMS.

GARRY RAY

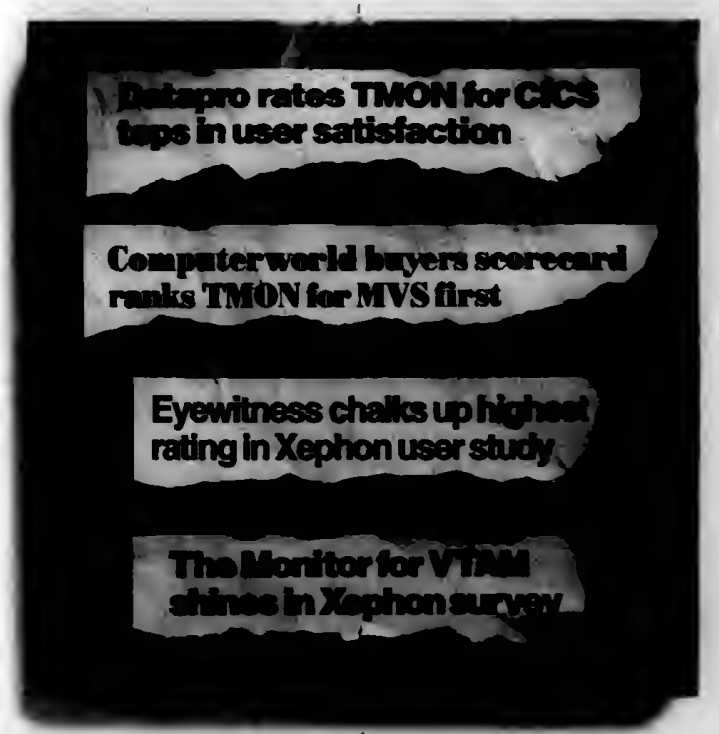
VMark releases GUI tool kit

VMark Software, Inc. recently announced NewLook, a graphical user interface tool kit for use with the company's Universe relational database.

The tool kit, which the Framingham, Mass.-based company said provides 80 functions including scroll bars, push buttons and dialog boxes, currently runs under X Window System- and character-based terminals. Support for Microsoft Corp.'s Windows and Apple Computer, Inc.'s Macintosh will be available later this year, the company said.

NewLook, which can be used to develop new Universe applications or to upgrade existing applications, is available at prices ranging from $395 for ASCII terminals to $10,000 for unlimited access to Universe applications.

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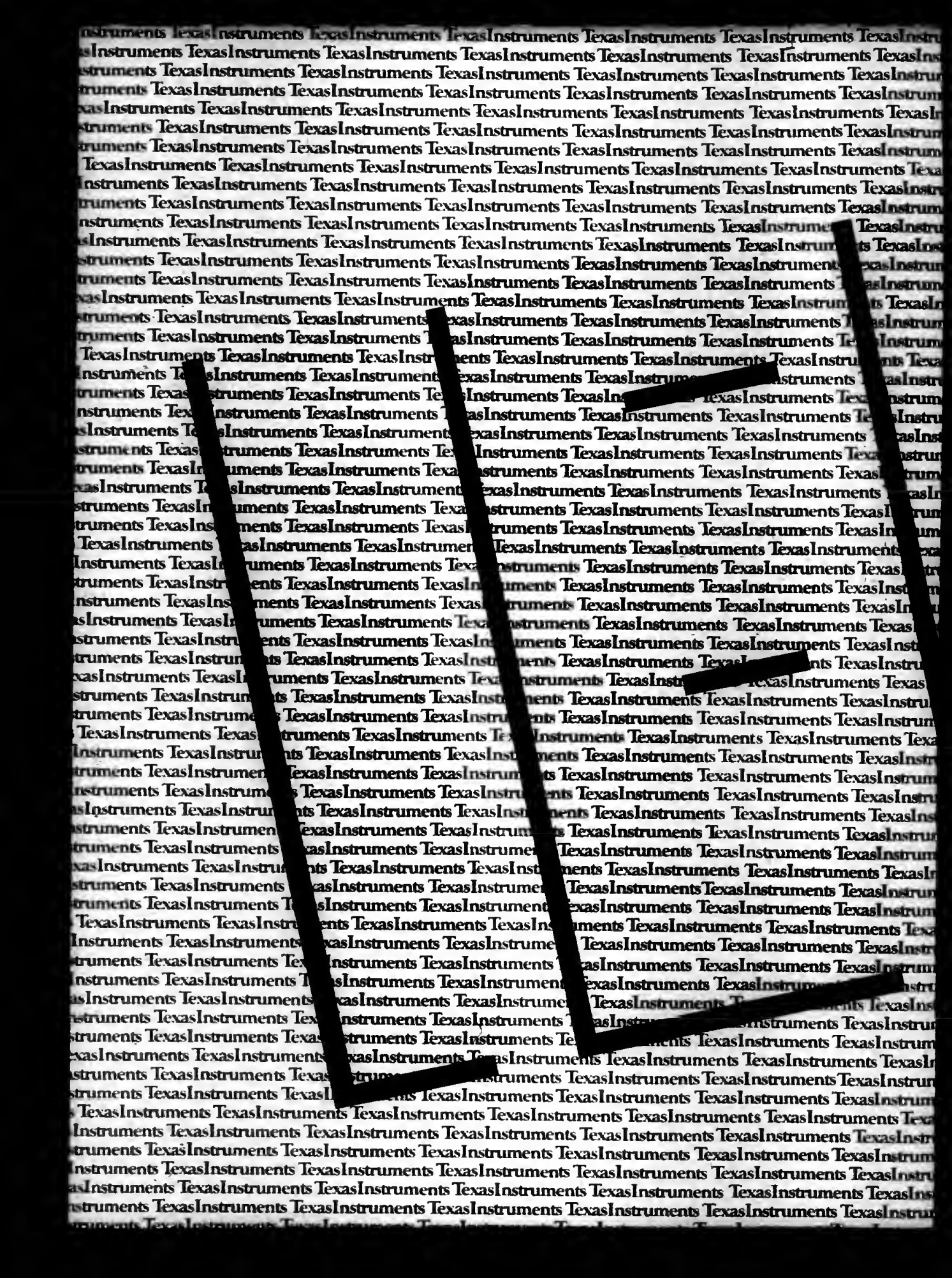
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Dirty downsizing

Forget what zealots and slick mags tell you. Here's some straight talk on the grubby political, technical and money issues at the front lines.

BY ALAN RADDING

Keyport Life Insurance Co. fought its way through the downsizing wilderness to the promised land but savored the milk and honey only long enough to discover a bitter aftertaste.

"Security, backup and recovery are problems," says Leslie Laputz, vice president of information services at the Boston insurer. For example, running backups over Ethernet with a personal computer is painfully slow (five hours nightly, 10 hours for full backup), even with two tape backup units. "This environment," Laputz concludes, "is not as mature as the mainframe."

Apparently, other users and vendors agreed and formed The Major Open Systems Environment Standards Group, or Moses, an informal new group aimed at leading downsizers to safety (see story page 67).

Second thoughts in paradise? Downsizing success stories sound so easy: Shoot the mainframe and convert to Unix networked systems running the latest off-the-shelf software for a fraction of the cost.

But lost and dirtied information systems managers say getting to downsizing heaven is a difficult journey. The road is full of treacherous twists and turns, they warn, especially when client/server is involved.

"The savings are there, but this is a daunting task," says Paul Ricker, vice president of IS at G. Heileman Brewing Co. The La Crosse, Wis., company has downsized Amdahl Corp. mainframes and an IBM 3090 to two Pyramid Technology Corp. servers.

IS managers and consultants cite a litany of obstacles: culture shock, staff retraining, lack of application software and development tools, system integration snafus and inexperience with networking. "Unix has a ways to go" before it matches the best mainframe policy and procedures, agrees William Bluestein, a senior analyst at Forrester Research, Inc. in Cambridge, Mass.

Loosely defined, downsizing usually refers to shifting applications from a mainframe to a smaller platform, such as a midrange system, a Unix server or a PC local-area network. Scaled-down systems are often smaller only in price and may provide more millions of instructions per second, storage, memory and throughput. These small new dynamos serve as conventional hosts or as part of a client/server system.

While the downsizing craze began to sweep IS shops in the mid- and late 1980s, many Fortune 1,000 companies are only now taking the plunge. And more are discovering that it's dirty business.

"There is no tradition of operating a Unix glass house," explains Mike Prince, director of information services at Burlington Coat Factory Warehouse, Inc. in Lebanon, N.H., a downsizing legend. "There is no body of common procedures."

Do it yourself

To cope, some users have developed their own procedures and resources in hopes of duplicating the rich administration tools found on proprietary mainframes. The smart (and lucky) ones do fine.

Keyport, for example, is proceeding in its four-year conversion from two IBM mainframe hosts to Ethernet and a NetFrame 450 superserver from NetFrame Systems, Inc. in Milpitas, Calif.



Stella Johnson

Downsizing at Millipore: *Three-year effort has yielded big payoffs — and challenges, Poulin says*

A key agent processing function was converted in April 1989; the first policies followed 11 months later. By the end of this year, Laputz says, 250,000 policies in several product lines will be switched over. So far, he says, the move has helped slash $1.3 million from the IS budget (now at about $5 million). But with IS interest in client/server booming, such success stories might be harder and harder to come by.

A report on downsizing last December by Butler-Cox Foundation, a division of CSC Index, Inc.,

Continued on page 66

Radding is a free-lance writer based in Newton, Mass.



KEY POINTS

▶A small, informal new group of users and vendors hopes to build a downsizing support system for IS managers. See story page 67.

▶Arvin Industries finds downsizing from mainframes to a VAXcluster is mostly evolution. See story page 66.

▶Certain applications don't downsize well: those with very large databases, thousands of users, strong security needs and 24-hour availability. See story page 68.

▶Keyport Life, G. Heileman Brewing, Burlington Coat Factory, Millipore, Trimark Investment Management, J. M. Huber, Andrew Jergens and Mead Data share experiences. Stories begin this page.

▶Tips from Concord Group Insurance, an experienced downsizer. See story page 68.

▶FAST FACT: Only 4% of 75 Fortune 1,000 firms interviewed by Forrester Research had "no interest" in downsizing.

QUOTABLE:

"Don't underestimate the difficulties."

Paul Ricker
G. Heileman Brewing

Dirty downsizing

CONTINUED FROM PAGE 65

cited several key technical and management risks of downsizing. The report says problems "derive mainly from the immaturity of client/server technology, especially that available for PCs."

Cited were less robust systems software, incomplete and unfamiliar systems development tools, inexperienced developers and incomplete systems and network management tools.

Add other possible gotchas, says Ted Klein, president of the Boston Systems Group, such as IS and user resistance and poor alignment with corporate direction, and you have a potentially fatal threat. "Each one can be deadly if it sneaks up on you."

Computerworld asked several IS managers and consultants to share their downsizing experiences, advice and cautions. Their tales follow.

One of the biggest lures of downsizing is the potentially big savings. Butler-Cox estimates that downsizing from a mainframe environment to client/server can slash ownership costs 20% to 30% over five years. For minis, savings can hit 10% to 25%, the firm says.

Delayed gratification

But as Millipore Corp. in Bedford, Mass., discovered, payoffs might not happen right away. Efforts to consolidate three U.S. data centers and downsize began in 1989 and are still under way, says Dan Poulin, director of information services. The goal is to shift from IBM, Data General Corp. and Hewlett-Packard Co. hosts to two Sequent Computer Systems, Inc. servers running Oracle Corp. software on a Transmission Control Protocol/Internet Protocol (TCP/IP) network.

Millipore, which manufactures technical separation equipment, figured the new setup would require one-third fewer IS staff members, and it budgeted accordingly, Poulin says. The company hired consultants to supplement its staff during the early stages of the conversion. Up-front investments were also made in networks, user workstations, hardware and software and training.

However, actual spending was more than initial projections, Poulin says, declining to cite specific figures. "But we're ending up with a lot more computing resources" and lower long-term costs, he says.

It's easy for downsizing savings to look very attractive, but beware of oversimplifying, cautions Allan Froehlich, a principal at Nolan, Norton & Co. His advice: "Watch out for cherry picking," or choosing a few ideal applications for downsizing.

IT'S A DIRTY JOB . . .

People issues



1. *Traditional IS and users may resist.*
2. *New staff with new skills needed.*
3. *Tricky to align downsizing with corporate goals.*

J. M. HUBER CORP. in Edison, N.J., a diversified natural resources and manufacturing company, hired consultants to help create a customer-oriented attitude in IS.

TRIMARK INVESTMENT MANAGEMENT, a large Toronto-based mutual fund, retained outside experts to implement Unix and TCP/IP and train in-house staffers.

IT'S A DIRTY JOB . . .

Application development



1. *Few development packages available for client/server.*
2. *Lack of integrated tools forces use of many different products.*
3. *Replacing mainframe screens and reports can be long and laborious.*
4. *Building GUIs is slower than mainframe application.*

[redacted] firm fused a software [redacted] mutual fund [redacted] bought the company.

[redacted] CO., a [redacted] company, used [redacted] AS/400 as an occasion [redacted] off-the-shelf software.

Initially, Froehlich says, cost justifications for such jobs can look terrific. But when you consider functions that remain on the mainframe, things can look less appetizing.

Another difficulty with starry-eyed justifications, he adds, is identifying just what services you will (or won't) get.

"Are are you going to have to do without some things?" Froehlich asks.

People pressure

While many IS chiefs agree that downsizing can be a lifesaver, positive feelings are far less universal among IS staffers and users.

"We had to deal with a total mind-set change among the MIS people," says Paul MacPherson, supervisor of systems architecture at Toronto-based Trimark Investment Management, a large Canadian mutual fund company.

Trimark Investment went from running a large IBM System/38 Model 700 supporting 145 users to a Pyramid Technology Corp. MIS 12 server running Oracle and supporting 150 users on Next, Inc. workstations. The project goes on-line this month.

Better price/performance, open systems and a freedom from reliance on a single vendor were the big motivators, according to MacPherson. The firm decided to downsize its Unit Holder Systems Administration application, the core mutual fund system consisting of about 1,000 programs.

A key part of the effort involved replacing a host-to-terminal Synchronous Data Link Control network with a TCP/IP network. So Trimark Investment hired consultants for the dual job of handling the conversion and developing TCP/IP and Unix skills for in-house IS staffers.

"Employees must have hands-on experience. They can't just attend classes," says MacPherson, who was hired specifically to bring Unix and TCP/IP leadership to the project. That kind of combination of retraining, new hires and consultants is a popular choice of downsizing companies.

Still, people issues can be among the toughest. "Where is the organization going to get the right people?" asks William Freitag, managing consultant at the Computer Task Group in Bel Air, Md. "Staffing is a major pitfall."

J. M. Huber Corp. in Edison, N.J., focused on changing IS culture, says John Shiels, vice president of IS. "People in IS are going to resist" downsizing, he says. "Even for those who don't resist, there will be tremendous cultural changes."

During the next five years, the $1 billion diversified natural resources and manufacturing company will phase out an IBM 3090 mainframe and switch to an IBM RISC System/6000 running Oracle. Division and corporate financial systems will switch by year's end.

Shiels says the cultural change was reflected in how IS treats users. As part of the downsizing preparation, consultants were brought in to work on IS attitude. "We have to learn to be customer-driven and responsive," not autocratic, as in the past, Shiels says.

The result? "The vast majority were receptive to learning new skills," Shiels says.

Chronic software shortage

Even though trained IS people are in place, experienced downsizers say, a lack of applications software and software development tools can be another serious stumbling block.

"More than 60,000 packages are now available for PCs, workstations and minicomputers," the Butler-Cox study notes. "There are, as yet, very few for client/server systems."

That means IS managers must tackle the dirty job of converting existing applications to the downsized system or simply writing new ones.

When Keyport Life began hunting, Laputz soon discovered that "there

The accidental downsizer

Switching to smaller systems is rarely a neat, tidy process. Ask Calspan, the research and development division of Arvin Industries, Inc. The diversified Buffalo, N.Y., manufacturer didn't quite know what it was setting loose when it began a three-year downsizing effort in 1987.

Freed from the rigid control of a centralized IBM mainframe, the division's 120 engineering-oriented users took off in every direction, following the shift to a two-node VAX 8200 cluster, says James Campobello, VAX systems manager.

For example, one group of users set up a TCP/IP network and brought in a terminal server to handle Unix terminals. All was well, Campobello says, until users tried to connect to the VAX.

"There are terminal servers that do TCP/IP and LAT [the VAX terminal network protocol], but they didn't buy one of those," Campobello says.

Other users put in Apple Computer, Inc. Macintoshes without making any provision for handling backup, he says.

"People get in trouble when they don't have a design in place before they start," says Edward Parrish, vice president of the Executive Insight Group, located in Bryn Mawr, Pa. "They just hand things off, and before you know it, things are out of control."

Today, Calspan runs a mix of 40 to 50 assorted Unix workstations, another 40 to 50 Macintoshes, a dozen or so PCs and various terminals connected, more or less, to the VAX Ethernet backbone in a variety of ways. The cluster consists of a VAX 8550 and a MicroVAX 3100 Model 30.

However, Campobello fears that much of the cost savings and advantages of downsized, distributed systems are being eaten up by continual maintenance and cumbersome multistep conversions.

Despite the problems, he acknowledges that there's no turning back.

"There are some real good things: The cost savings — even after you've figured in the hidden costs — are terrific," Campobello says. "And the users love it.

"I don't know where we are going to replace the VAX down the road with completely distributed, open systems," he says. "There never was a plan. It's been more like an evolution that we shepherded along."

ALAN RADDING

was nothing out there in network software for insurance processing." So the company hired TriMark Technologies, Inc. in Buffalo Grove, Ill., to develop new software using the Magic/PC fourth-generation language (4GL) from Aker Corp. in Irvine, Calif.

The first prototype was delivered in a few months, and user demand for the graphical user interface (GUI)-based environment mushroomed. New enhancements drove software costs over budget, but Laputz says executives didn't complain because users were getting additional functionality.

Trimark Investment took another approach: It found a software vendor with a good Canadian mutual fund package and purchased the company. MacPherson says the vendor now serves as Trimark Investment's programming department.

Heileman Brewing opted to postpone writing new systems. In the last three years, it downsized to two Pyramid servers, replacing its IBM 3090 and two Unisys Corp. A series machines. The IS group spent nine months replicating as closely as possible the 3090 screens and reports in the new Pyramid/Oracle environment.

With the older Unisys applications, however, the company plodded through a complete software development process with some applications still not finished, Ricker says.

Browning says the firm found suitable host-based, off-the-shelf packages to replace most of the obsolete, homegrown applications written in assembler language. "One of our goals for downsizing was to bring our software up to industry standards," he says.

The company, however, had less success finding good LAN packages, he says. Since 1989, the company's PC population has swelled from a handful to more than 300 spread over a dozen LANs.

"We bought some specialized applications, but they gave us problems," he says. These industry-specific packages had no equivalents on the AS/400 and were not current with the latest LAN operating systems and drivers. "The vendors were still using old releases of the software, and their support was weak."

Organizations that opt to develop their own software may encounter development tools that are less than robust. "There is no integrated set of tools," Computer Task Group's Frietag notes. "You will have to use a combination."

According to the Butler-Cox study, most client/server tools are fairly new and have "significant limitations," especially in performance, integrity and ease of use.

"We're still out there looking for the right tools for networking and client/server," Millipore's Poulin says. He says the company can "hammer out the basics" with the existing Oracle tools, but "we're still looking for more."

Ironically, Poulin says, the lack of tools makes him look back longingly at proprietary systems. "DECnet comes with more tools," he says. "It's a lot easier than TCP/IP."

Even where tools are available, development is still hardly a breeze.

Consider Mead Data Central, Inc. The Dayton, Ohio, manufacturing and information services company downsized its internal administrative systems from an IBM 3090 running IDMS to an NCR Corp. 3000 running Unix with OS/2 and DOS on the desktop.

According to Gary Whitney, director of systems evolution, Mead picked a 4GL from Uniface Corp. because it allows fast prototyping. Even so, he says, building a GUI is a lot harder than building a plain 3270 application.

"With the GUI, you have to worry about menu bars, buttons, keyboard mapping," Whitney says.

Networking tie-ups

Say you're lucky enough to best the big problems — people issues, lack of application software and development tools and the operating environment. You still need to roll up your sleeves and tackle some other big obstacles, particularly systems integration and networking.

Unlike proprietary shops, downsized IS must interact with multiple computer, network and software suppliers, which experienced IS hands say can be chaotic. "There is a whole different way of dealing with vendors," Trimark Investment's MacPherson warns. With the System/38, the firm had to deal with only one vendor (IBM), which took responsibility for making everything work. In the downsized environment, he says, "we have seven major vendors under our roof."



Keyport's Laputz: *Persistence pays off*

In this environment, solving problems means dealing with two, three or more of those vendors simultaneously. "The key is orchestrating the vendors," MacPherson says. "We learned quickly not to meet with them one at a time. You have to get them all in the same room, or all you'll get is finger-pointing."

His tactic: Assemble all vendors at once and make them cooperate to confront a problem.

On the networking side, many shops ignore the many hassles that can crop up. "The mistake people make is that they don't look at the communications side early on," Ricker says. To avoid problems, Heileman installed an X.25 backbone, Ethernet LANs running LAN Manager and bridges before embarking on downsizing.

Even in the best planned shops, simply adjusting to and running LANs can be a headache. "We're still coming to grips with the operational aspects of LANs," Browning says.

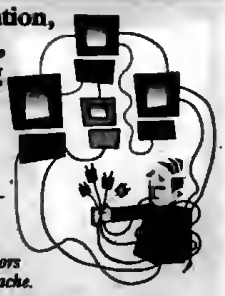
In the mainframe environment, networking problems could be resolved at the data center, he notes. "With LANs, any failure at a PC is much harder to diagnose. It's been a learning process for us," he says.

Keyport was less fortunate: The insurer discovered its 2.5M bit/sec. Arcnet LANs were too slow for the downsized environment and had to upgrade to Ethernet halfway through the project, according to Laputz.

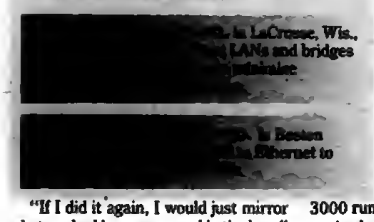
The bottom line: No pain, no gain. "Don't underestimate the difficulties," Ricker warns. •

IT'S A DIRTY JOB . . .

Administration, integration, networking



1. *Security, recovery and backup less mature than on mainframes.*
2. *Coordinating multiple vendors a major headache.*
3. *Failures on PC nodes much harder to isolate. Certain LANs too slow for downsized environment.*



"If I did it again, I would just mirror what we had because speed is the key," Ricker says. He says it appears that the faster a company gets to the downsized platform, the sooner it begins reaping the cost savings, which in Heileman's case was several million dollars a year. "Once you are in the new environment, you can start rewriting applications," Ricker says.

On the other hand, The Andrew Jergens Co., a Cincinnati-based manufacturer of lotions and soaps, didn't have problems with application software when it began converting from an IBM 4381 mainframe to an Application System/400 in 1989, says Charlie Browning, director of IS.

Holy Moses! Send help!

Don't let the numbers fool you. Even though many companies are switching from mainframes to smaller networked platforms, users are still largely on their own.

"One shortcoming when you downsize is that there isn't a support network," notes Mike Prince, director of information services at Burlington Coat Factory Warehouse.

To beat that problem, Prince and five other users and vendors formed a new group last year that hopes to spot downsizing trouble spots (such as backup) that need standard procedures and technology.



New group *supports downsizers, Prince says*

The Major Open Systems Environment Standards (Moses) Group also includes US West, Millipore, BT and internal IS departments from Oracle and Sequent.

So far, the group has met twice: in Denver in April and again in Bellevue, Wash., in July. Members plan to meet again in September in San Francisco.

Another aim of Moses, Prince explains, is to encourage Unix market vendors to address common concerns. Eventually, Prince says, he hopes Moses will be a vehicle that lets IS managers get together and talk about downsizing concerns.

To contact Moses, use the following Internet address: inmoses@us.oracle.com

ALAN RADDING



"DEC hit by Du Pont downsizing" [CW, May 25, by Nell Margolis].

"More than downsizing" [CW, April 20, by Elisabeth Horwitt].

"County thinks small, dumps 4381 for LANs" [CW, April 6, by Christopher Lindquist].

"Giving downsizing the hard sell" [CW, March 23, by Jean S. Bozman].

"Merrill Lynch alters net to cut costs" [CW, Feb. 3, by Joanie M. Wexler].

Also of interest:

Report: "Downsizing Computer Systems," CSC Index, Inc., June 1992, (617) 492-1500.

Report: "Mainframe Replacements Accelerating," Forrester Research, Inc., (617) 497-7090.

Schussel's Downsizing Journal, $199 for 12 issues, Digital Consulting, Inc., (508) 470-3880.



An expanded "Downsizing Expo" runs Aug. 25-27 at the Moscone Convention Center in San Francisco. Sponsored by Digital Consulting, Inc., the show includes conferences on downsizing, interoperability, business re-engineering and a related products exposition. Highlights include 16 technical tracks, a one-day executive track, a Japanese downsizing conference and an imaging showcase. For information, call (508) 470-3880 between 9 a.m. and 5 p.m.

FIRST PERSON

Lessons from a seasoned downsizer

BY DIRK FAEGRE

Downsizing has become the latest stampede in the computer industry, with a herd of hardware vendors, analysts and information systems managers touting the benefits of trading mainframes for client/server systems. But for a few of us, this "new" trend is an old story.

A relative handful of companies made the move years ago. The people following in their footsteps might do well to learn from their experiences.

My company is a good example. Concord Group Insurance Co. moved to a combined mainframe/workstation environment in the mid-1980s, with 300 Unisys Corp. CTOS workstations linked to a Unisys A series mainframe. We have never looked back.

Here are some of the lessons we learned:

• **Have a concrete reason to downsize.** More bang for the hardware buck is the usual reason for downsizing. But the real question you should be asking is "What can downsizing do for the *people* in my organization?" Downsizing has the potential to improve people's lives in the workplace, promoting teamwork and improving productivity.

Example: At Concord Group, the touch of a key gives users a whole series of responses never possible with a dumb terminal. Psychologically, that makes happier campers.

• **Don't just port applications; improve them.** Too many IS managers think of downsizing in terms of blindly moving their mainframe application over to the client/server network. They should instead rethink their application to take full advantage of the new environment.

Example: In the old system, users filled out on-screen forms on the mainframe. Terminal data could only be sent in single blocks; errors could be spotted only after transmitting. The delayed feedback resulted in lots of wasted effort.

The CTOS system gave us the opportunity to rethink the process. Using Progress Software Corp.'s fourth-generation language (4GL), we developed an application called Action+Plus that provides instant feedback throughout the data entry process.

The application performs validity checks on the dates, ages, license and registration numbers at the keystroke level, not minutes later. This has resulted in a dramatic increase in productivity and has made data entry much less frustrating. It's clear that we could reduce the staff by about 20% or halt future growth because of downsizing.

• **Think application portability during development.** When we began writing Action+Plus, the Progress 4GL was not available on CTOS systems. But we were able to begin the project under DOS, then move it to the native CTOS later on, all without missing a beat. We later tested the finished application on a DOS personal computer and a Sun Microsystems, Inc. Unix workstation. It ran perfectly in both environments.

> **OPTIONS ARE KEPT** open by not being locked into a particular platform too early.

Bottom line: Options are kept open by not being locked into a particular platform too early.

• **Harness the power of multiple processors.** Client/server systems may look small in comparison to the mainframe, but when they work as a "team," they can carry large loads.

Example: In our design of Action+Plus, we created a distributed system in which tasks can be sent to idle workstations with a single keystroke. That has been especially useful for agents who must churn out a succession of lengthy business reports at the end of each month.

Now, one of our agents completes his month-end process using 14 networked machines, which all process different reports at the same time with no user intervention.

When a given workstation completes the processing of one report, it can immediately pick up another, enabling the agent to close a month in just a few hours.

This approach represents an easy way to employ the power of parallel processing.



Have a good reason *to downsize and look for new opportunities, Faegre advises*

• **Don't eliminate the mainframe — surround it.** As smaller systems loom larger in the planning process, the mainframe is sometimes forgotten. A better strategy is to build the client/server system around the mainfame, fitting the most appropriate task to the most appropriate platform.

Example: Our Unisys A-10 is connected to the motor vehicle departments in New Hampshire, Maine and Vermont. This link enables any agent at any office to run a motor vehicle report on an individual.

Whereas other insurers send computer tapes back and forth and wait up to several weeks to verify license records, we get the information in about 15 seconds.

This immediate response means our agents don't waste precious resources trying to sell insurance to someone with a suspended license or, worse, providing insurance coverage to an undesirable individual.

At the moment, we believe the mainframe is still the best solution for widely scattered agents. I am not aware of any Unix servers capable of supporting 1,500 clients as gracefully as the A-10 does.

• **Think of downsizing as a productivity improver.** The most successful installations view downsizing as an ongoing process. They are constantly developing new applications and adding more workstations. •

Faegre is a systems administator at Concord Group Insurance Co. in Concord, N.H.

ADVICE

Beware these untouchables

A little downsizing discretion is often the better part of valor. Experts say heaps of headaches can be avoided simply by knowing what to downsize — or what not to.

Certain applications and systems will resist most attempts at downsizing, according to Ted Klein, president of the Boston Systems Group.

Until hardware and software becomes more state of the art, Klein advises organizations to avoid downsizing the following:

- Applications with very large databases that cannot be easily partitioned and distributed.
- Applications that must provide very fast database response to thousands of users.
- Applications that are closely connected to other mainframe applications.
- Applications that require strong, centrally managed security and other services.
- Applications that require around-the-clock availability.

DOWNSIZING
Part II: Tips and techniques

Getting down

Did you know there is more than one way to move to smaller platforms? In fact, there are at least seven, depending on your situation.



James Endicott

BY ERIC P. BLOOM

Wallpaper is one option. But then again, something more extreme might be warranted. No, we're not talking about interior design. These choices have to do with something at least as traumatic as home remodeling: downsizing.

The decision to move to smaller platforms may seem like a tough one, but actually, that's the easy part. The real killer is figuring out exactly how to do it. There are a bunch of possibilities, ranging from the "wallpaper" approach, in which you simply front-end existing mainframe screens with a graphical user interface (GUI), to the other extreme, in which you have applications access and update data across various hardware platforms. The approach you choose depends on what your users need and how completely your company wants to move to off-host technologies.

Below are the various techniques available, how they work and in which situations they work best:

1 The wallpaper approach. This option's name is derived from the fact that it changes your system's look without significantly changing its structure. Wallpapering entails front-ending your 3270 mainframe screens with a GUI. There is no need to do any mainframe modifications.

When front-ending a 3270 screen with a GUI screen, you read the data passed from the mainframe and display its contents to the user in a different format. In effect, you write a personal computer program that treats the 3270 buffer like a data file. But in actuality, you write a PC-based program that controls a mainframe-based application.

This technique, by enabling you to move your entire development effort to the workstation, can speed development time and takes advantage of easy-to-use PC development tools.

Another plus is that you can reduce mainframe processing cycles by building PC-based error checking, Help and menu-bypassing logic into the PC application. Wallpapering your machine with a GUI can make all your mainframe applications look and act the same, even though they're from different vendors.

That's not to say that front-ending a mainframe application with a GUI has no downsides. In fact, it's sometimes been described as "putting lipstick on a pig." For instance, because the mainframe software is not aware of the PC-based front end, it does not take advantage of the pre-edited data and re-edits all incoming data. In this way, it expends CPU cycles.

Another disadvantage of this method is the burden it places on your staff. Not only will your staffers have to support all existing mainframe code, but they will also need to support additional PC-based code.

2 Modified wallpaper approach. The modified wallpaper method, like the wallpaper approach, front-ends a mainframe with a GUI. However, it goes its namesake one better by automatically executing PC-based software like electronic mail, word processing packages, groupware products and other PC tools, enhancing mainframe functionality. It also moves certain screen edits from the mainframe to the PC screen, improving mainframe performance and reducing processing time.

The idea behind this is simple: If the front-end program is passing data between the 3270 buffer and a PC-based GUI, it can analyze that data and perform actions on it.

With this approach, you bypass edits on the mainframe that have been completed

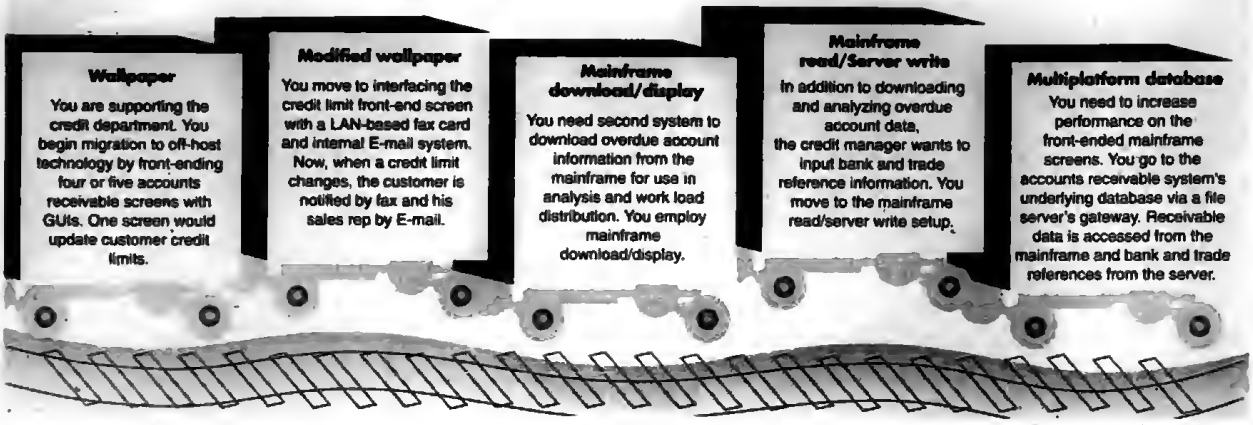
Continued on page 70

Bloom is a principal consulting manager at Fidelity Investments in Boston, an adjunct faculty member at Boston University and the author of various books on Cobol, C, Pascal and Windows-based application software.

- **'Wallpapering' can speed development**
- **Slow migration might be the ticket**
- **A downsizing quiz**

Slow train to downsizing

Deploying a few downsizing approaches in succession can be a good plan for measured migration to small platforms



CW Chart: Janell Genovese

Continued from page 69

by the PC front end, thereby reducing mainframe CPU cycles.

To understand how this approach can be used to enhance applications functionality, consider how it might help a credit department process information on a customer who has not paid his bill.

The credit manager, accessing the mainframe-based accounts receivable system through a PC-based front end, would set the customer's credit line to zero. The front-end software would automatically fax a form letter to the customer, send an E-mail message to the customer's sales rep and update the marketing group's Unix-based lead tracking system.

The credit manager's productivity is greatly improved because he does not have to manually send a fax, call the sales rep and log on to the marketing system.

However, be advised that you will need additional design and development time to define the best system interconnections and perform needed mainframe program changes. You will also have more code to maintain.

3 Mainframe download and display approach.

In the mainframe download and display approach, the mainframe periodically downloads a data file of detail and/or summary information to the PC or local-area network server. Once downloaded, PC-based applications read, summarize, display, analyze and print this data.

This approach is ideal for analytical tasks in which up-to-the-minute data is not required. It can be used to supply executive information systems or statistical analysis and report generation systems.

Mainframe download and display is not overly expensive to implement because it can often be developed using existing technologies. For example, you could write a Cobol program that reads your production databases and creates a sequential file that can be downloaded using the file transfer in your PC-based 3270 emulator. Once downloaded, this data can be accessed via any PC package that can read sequential ASCII files.

Other ways the data can be downloaded include the following:

- ▶Via a server gateway using IBM LU6.2.
- ▶By writing to a magnetic tape and then reading it from a tape drive on the server.
- ▶By connecting your data to both the mainframe and the LAN. This can be achieved by placing your mainframe-based data on a database machine that is both channel-attached to the mainframe and connected to your LAN via a protocol.

There are some drawbacks to approaching downsizing this way, however. Moving large data sets from the mainframe to a smaller platform can be time-consuming and can tie up mainframe, network and server resources. Also, downloaded data cannot be used to update the mainframe. The fact that data is stored twice (once on the mainframe and once on the server) can raise data integrity, security and disk space issues.

4 The dynamic download and display approach.

This method downloads specific pieces of information at the time they are requested rather than entire files.

It permits simultaneous access to data from various mainframe and server databases and works best for applications in which up-to-the-minute information is required on single records or small sets of records, such as customer inquiries about account balances or order status.

The way dynamic download and display works is that a query is passed from the file server or user workstation to the mainframe. The mainframe returns an answer that is displayed on the screen or used within a specified process or calculation and then discarded.

This process is generally accomplished in one of two ways: either via a high-speed link between a LAN server and the mainframe or via a 3270 connection between the mainframe and the user workstation.

There are some negatives to weigh before choosing this approach. On-demand querying of production databases can affect production system performance. The fact that a user's workstation or server must be continuously connected to the mainframe can tie up mainframe, network and PC-based resources.

In addition, the downloading of large data sets during the day can be time-consuming and place further strain on the mainframe, network and servers.

5 Mainframe read/Server write approach.

Like previous approaches, this technique uses mainframe data as input to server-based applications. In this instance, however, the "official" copy of certain corporate data is being stored on a platform other than the mainframe.

In the mainframe read/server write method, mainframe-based data may be periodically downloaded to the server or sent dynamically as needed. A credit department, for example, may at times download a list of customers with overdue bills from the mainframe accounts receivable system, checking those against server-stored trade and bank reference information. Or a user who enters account numbers into the server could cross-check them against a downloaded mainframe master file of account numbers. In this way, the company can ensure data quality.

The greatest advantage to the mainframe read/server write approach is that it reduces mainframe data storage and CPU costs by placing selected types of data on a less expensive, off-host platform. It also enhances the usefulness of mainframe and server data by allowing the user to view data from both machines on his screen at the same time.

Because mainframe information is downloaded periodically, it's important to make sure server-based applications are working with current data, not data that was downloaded a week ago. Also, because corporate information is being stored on the server, the server must be backed up and maintained like any other production machine.

On the technical side of things, if your data is downloaded periodically, it can be placed in your database server with read-only access. If your data is retrieved dynamically from the mainframe, your application will have to be connected to

Continued on page 72

Testy situations

We'd like to test your downsizing acumen. Below are various situations in which one of the seven downsizing approaches discussed in the main story applies.

Can you decide which approach is best for which business situation? Good luck. Answers are on page 72.

Business situation 1: Users need to access and update information that physically resides on more than one platform.

Business situation 2: You have a well-built mainframe application with a poorly designed user interface. You don't want to do any massive mainframe changes.

Business situation 3: Users want account information on a particular customer when the customer calls. You decide you don't want to download entire mainframe data files but only specific pieces as needed.

Business situation 4: Users want to enter and validate general ledger journal entries off-line for eventual upload and batch processing.

Business situation 5: You are front-ending a mainframe with a GUI, but users could benefit greatly from integration with PC tools such as E-mail and work-flow technologies.

Business situation 6: Users want to develop a system that has no need for mainframe information.

Business situation 7: Users want to analyze summarized mainframe data for statistical analysis. There is no need for up-to-the-minute information.





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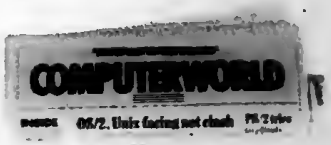
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The Newspaper of IS

Continued from page 70

both the mainframe and your server-based database simultaneously.

This connectivity can be attained in a number of ways. One option is through gateways in the server-based database that provide mainframe access. Another option is to access your mainframe data via the application programming interface in your 3270 emulator, tying into the mainframe via a 3270 session.

The server-only approach. This is the approach that usually comes to mind when most people think of "downsizing." Here, all-data and stored procedures associated with data are stored on the server, and the application is stored on the PC (client). The environment would typically contain a relational database on the server and a GUI-based development tool.

Target users are companies having mature LAN or wide-area network infrastructures that can ensure companywide access to applications and data.

The advantages to this approach are that it is free from the complications associated with mainframe connectivity. It provides faster development times, lower priced hardware, greater functionality and easy-to-use graphical interfaces.

Yet without integration with existing mainframe software, it may become more complicated to create executive information systems and other applications because information has to be pulled from various platforms around the enterprise.

The multiplatform database approach. The multiplatform technique enables your application to read, manipulate and update databases on both the mainframe and the server. It is likely the form all downsizing will eventually take.

If your users need to access and update data on both the mainframe and the server and if you don't want to require users to enter the same data into two systems, this is the approach for you.

Not only does this setup eliminate manual processes associated with updating multiple systems, but it can also minimize internetwork traffic by placing data on the server most likely to need it.

However, this level of interaction comes at a price: The setup is complex to design, build and maintain. It requires expertise in mainframe development, client/server development, distributed database design and data communications.

You must not only normalize the database but also figure out which data is appropriate for which platform.

Once built, the multiplatform system requires constant maintenance; there will usually be a pending software upgrade.

As if that weren't enough, there is a potential risk of data corruption caused by inconsistencies between the mainframe and the server database. Take special note of the dual commit process, in which two pieces of related data or copies of the same piece of data are put in separate databases at the same time. If one database is updated and the other is not, you may run into trouble, such as when an order is entered on the server without a deduction in the number of items in the related mainframe inventory database.

****

While you can implement each of these approaches individually, you can also deploy a number of them as part of a migration plan to off-host computing (see chart page 70). The idea is to begin your downsizing activities with the lower-risk, less technically complex approaches, such as wallpaper and data downloading, and migrate to the more complex designs as users and developers gain more experience in off-host technologies.

Taking incremental steps toward downsizing can help you gain internal momentum by developing a track record of successes. But expect to pay a little more; your development costs will increase because systems are continually being enhanced and/or redeveloped. ●

Answers to quiz:

▶**Answer #1:** Multiplatform database. If your data resides on multiple platforms, you don't want to require the user to enter the same data into two systems.

▶**Answer #2:** Wallpaper. Gives users a friendly front end for accessing the mainframe.

▶**Answer #3:** Dynamic download and display. Up-to-the-minute information is needed from a single data record so that users get the record at the time of need.

▶**Answer #4:** Mainframe read/server write. General ledger charts of account information can be downloaded and used to validate entered transaction data.

▶**Answer #5 :** Modified wallpaper. Assist the user by providing connectivity to fax cards, E-mail, spell checkers and other PC-based tools.

▶**Answer #6:** Server only. If no connection to the mainframe is required, it should be easier to develop using PC- and LAN-based tools.

▶**Answer #7:** Mainframe download and display. If the mainframe-based data is summarized via a Cobol program and downloaded to the server, the summarized data can be accessed using any PC-based spreadsheet or statistical tool.

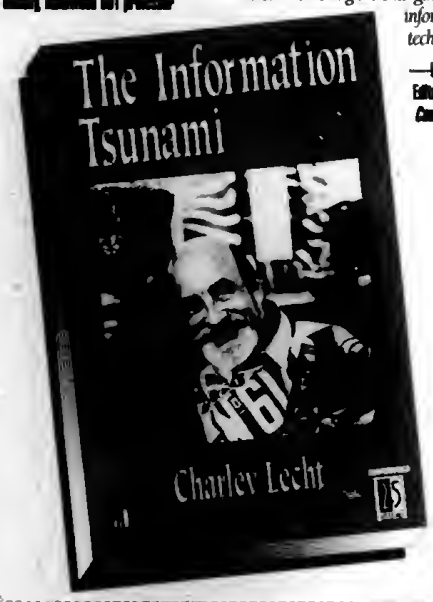
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MANAGER'S JOURNAL

EXECUTIVE TRACK



The U.S. Army has the very model of a modern information systems director: **Maj. Gen. Samuel A. Leffler**, selected for assignment as Commanding General of the Army's Information Systems Command (ISC). Leffler, who will succeed **Lt. Gen. Peter A. Kind**, is currently serving as deputy commander at the worldwide ISC headquarters at Fort Huachuca, Ariz. Kind, meanwhile, has been nominated by President Bush for reassignment to Washington, D.C., as director of IS for Command, Control, Communication and Computers, pending Senate confirmation.

At Philadelphia-based **Cigna Corp.**, **Eric O. Scheffler** — former vice president and IS officer for the insurance firm's property and casualty division — has moved into a new position as IS officer with the specialty marketing division. His successor at the property and casualty division is **Kathleen Taylor**, who formerly headed up corporate systems. No one has yet been named to replace Taylor, who also advances from vice president to senior vice president.

Marshall Sprigg, IS director at **Exxon USA** in Houston, recently retired after more than three decades of service to the oil giant. Now in the post is **James C. Bowen**.

Sea-Land Service, Inc. has named **Thomas D. Murphy** and **William C. Donovan** to head up its worldwide information resources and telecommunications network. Murphy is currently serving as vice president of information technology systems at the Edison, N.J.-based freight company and sits on the senior management committee. He reports to President and Chief Executive Officer John P. Clancey. Donovan, who has been an outside consultant to Sea-Land since last November, now signs on as vice president of technology services, reporting to Chief Financial Officer Robert J. Grassi.

Stable plans for rocky times

Industry upheaval has banks turning to standard practices, third parties

INDUSTRY CLOSE-UP

IS in Banking

BY ALICE BREDIN
SPECIAL TO CW



Susan Green

When J. Carryl Seaman came to HomeFed Bank FSB in San Diego last August as chief information officer, HomeFed was looking for a buyer. By this fall, the bank will be sold, and amid all the turmoil, Seaman has to plan for the future.

"We know there are certain things we need to put in place, regardless of who our investor is," Seaman says.

Many information systems department heads find themselves in situations similar to Seaman's. Mergers, acquisitions, consolidations and failures are keeping IS managers in suspense: They don't know if their institution will be in operation from one day to the next or if they'll be working for someone else in the morning (see chart page 75).

All this commotion has made planning a bear. How do you plan systems and staffs in uncertain times?

The answer, according to IS executives and consultants, includes going with standardized practices and open systems, curbing (but not killing) new system purchases and relying on third parties.

Getting it together

"Banks want flexibility," says Laura Jean Stuart, president of Stuart Research, a company in Cambridge, Mass., that deals with IS issues in the banking industry. "IS managers cannot map out the next 10 years, so they are not getting drawn into proprietary systems. They are taking a building-block approach of assembling open systems."

At The Chase Manhattan Bank NA, "we have a standardization of platforms and a limited number of platforms that make it easy to integrate a portfolio or [acquired] company into Chase," says Craig Goldman, CIO at Chase.

The platforms include DOS, IBM's OS/2 and Microsoft Corp.'s Windows.

Chase has a standardization group coordinated by three IS people — two senior business systems planners and a manager of architecture and standards development. This group sets mandatory standards and optional guidelines, based on input from business staff members, for everyone at Chase worldwide, according to Goldman.

For example, the current personal computer standard is an Intel Corp. 80386-based box running DOS 5.0, Windows 3.0 and Novell, Inc.'s NetWare 386.

Any technology purchase that does not fall within these guidelines must go through an exception process to prove why it is necessary, according to Goldman.

This infrastructure, he says, has been the best way for him to plan for a changing future.

"We don't have 14 different alternatives now," says Peter Lacovara, vice president in the information strategies, architecture and standards department

Continued on page 74

High-tech tools could help cut legal bills

BY ELLIS BOOKER
CW STAFF

Move over, Perry Mason — make room for the information systems director.

A slew of high-tech tools demonstrated to legal educators from around the globe, who gathered in Chicago last week for a conference on information technology are not likely to cut lawyers out of the picture, experts said — but they may well cut the bill.

A follow-up to a meeting arranged by Harvard University Law School two summers ago in Salzburg, Austria, last week's event was sponsored by Chicago-Kent College of Law and Lotus Development Corp.

"We're firmly convinced these systems should ultimately be a great investment for reducing the cost of practicing law," said conference attendee William Boyd, a professor of law and director of computer development at the University of Arizona College of Law.

In one demonstration, for example, transcripts and other material from a "courtroom of the future" were available on-line to lawyers.

Another possibility is the use of expert systems to help litigants settle their differences before they reach the already overburdened courts.



Both Boyd and Kent College's Ronald W. Staudt said automation could eventually reduce the amount of time lawyers spend on routine functions, such as preparing documents.

But Staudt added that automation cannot yet make sharper lawyers. "Their jobs, in fact, have become more complex as networks and databases have given them access into ever-growing amounts of case law and precedent," he said.

Last week's conference, Staudt said, covered several broad technical areas, including artificial intelligence and expert systems; computer-aided instruction, including multimedia and hypermedia; and computer-assisted research via on-line services.

But just about as much attention at the three-day conference, he added, was directed at the state-of-the-art building in which it was held.

Designed to provide access to current and future computerised resources, the Chicago-Kent building has been fully wired with some 800 data ports in halls, classrooms and at 450 seats in the library. From these ports, students and faculty equipped with laptops — the school this month is purchasing 30 portables as part of a pilot program — access a 10Base-T Ethernet.

"They'll be able to plug into a server with about 3G bytes worth of data and programs," Staudt said, adding that users will also be able to access, via an X.25 gateway, Westlaw and Lexis, the country's two largest on-line databases of legal information. Westlaw is a service from West Publishing Co. in St. Paul, Minn; Lexis is operated by Mead Data Corp. in Dayton, Ohio.

CALENDAR

AUG. 23-29

Interex Users Conference. New Orleans, Aug. 23-27 — Contact: Michelle Pettigrew, Interex, Sunnyvale, Calif. (408) 738-4848.

SynOptics User Group Conference. Washington, D.C., Aug. 24-26 — Contact: Dennis Farr, SynOptics User Group, Santa Clara, Calif. (408) 988-2400.

Marketing the IS Organization Internally. Chicago, Aug. 25-26 — Contact: The Ouellette & Associates Registrar, Bedford, N.H. (603) 623-7373.

Auto-Tech. Detroit, Aug. 25-27 — Contact: Automotive Industry Action Group, Southfield, Mich. (313) 358-3570.

Downsizing Expo. San Francisco, Aug. 25-27 — Contact: Digital Consulting, Inc., Andover, Mass. (508) 470-3880.

Cohesion Conference. Boston, Aug. 26-28 — Contact: Stephanie Vickers, BIS Strategic Decisions, Norwell, Mass. (617) 878-6650.

Computerfest '92. Dayton, Ohio, Aug. 29-30 — Contact: Mark Hanslip, DMA Computerfest, Dayton, Ohio. (513) 263-3378.

AUG. 30-SEPT. 5

Primavera Systems, Inc.'s Ninth Annual User Conference. Philadelphia, Aug. 30-Sept. 2 — Contact: Primavera Systems, Inc., Bala Cynwyd, Pa. (215) 660-5830.

International Training Conference & Exposition. Anaheim, Calif., Aug. 31-Sept. 2 — Contact: Russell F. McKinnon, Trade Associates, Inc., Rockville, Md. (301) 468-3210

Surface Mount International Conference. San Jose, Calif., Aug. 30-Sept. 3 — Contact: SMTA, Edina, Minn. (612) 920-7682.

SEPT. 6-12

Rocky Mountain Computer Conference and Exposition. Denver, Sept. 8-10 — Contact: National Trade Productions, Inc., Alexandria, Va. (703) 683-8500

SEPT. 13-19

Buscon '92/East. Boston, Sept. 15-17 — Contact: Buscon '92, Norwalk, Conn. (203) 852-0500.

DOD-STD Conference. Washington, D.C., Sept. 15-17 — Contact: David Maibor Associates, Inc., Needham, Mass. (617) 449-6554.

Crystal Ball '92. San Diego, Sept. 17-19 — Contact: Acucobol, San Diego, Calif. (619) 689-7220.

DevCon '92. Phoenix, Sept. 18-23 — Contact: Microsoft Fox, Inc., Perrysburg, Ohio. (800) 927-6368.

SEPT. 20-26

Sapphire '92. Orlando, Fla., Sept. 20-23 — Contact: Sylvia Bauer, SAP Canada, North York, Ontario. (416) 229-0574.

Pen-Based Expo. Los Angeles, Sept. 21-23 — Contact: Digital Consulting, Inc., Andover, Mass. (508) 470-3880.

Image World. New York, Sept. 21-25 — Contact: Benta Roumanis, Knowledge Industry Publications, Inc., White Plains, N.Y. (914) 328-9157.

Virtual Reality '92. Westport, Conn., Sept. 23-25 — Contact: Meckler Conference Management, Westport, Conn. (203) 226-6967.

The Fifth Annual New England Computer Operations Conference. South Portland, Maine, Sept. 24-25 — Contact: Jerome Lemelin, Portsmouth Naval Shipyard, Portsmouth, N.H. (207) 438-2815.

SEPT. 27-OCT. 3

Sensors Expo's Seventh Conference. Chicago, Sept. 29-Oct. 1 — Contact: Expocon Management Associates, Inc., Trumbull, Conn. (203) 374-1411.

The Sixth Annual Strategic Issues Conference and Client Forum. La Jolla, Calif., Sept. 29-Oct. 2 — Contact: Computer Intelligence, La Jolla, Calif. (619) 450-1667.

CASE World Conference & Exhibition. Boston, Sept. 30-Oct. 2 — Contact: Digital Consulting, Inc., Andover, Mass. (508) 470-3880

CD-ROM Expo '92. Boston, Sept. 30-Oct. 2 — Contact: Mitch Hall Associates, Dedham, Mass. (617) 361-2001.

Software Publishers Association (SPA) Annual Conference. Washington, D.C., Sept. 30-Oct. 3 — Contact: SPA, Washington, D.C. (202) 452-1600.

Graph Expo East '92. New York, Oct. 3-6 — Contact: Graphic Arts Show Co., Reston, Va. (703) 264-7200.

Stable plans

CONTINUED FROM PAGE 73

in New York. "The bank says, 'We have worked on these products, and we certify they are the right ones to use.' It saves a lot of time and research."

Chase's scrutiny of purchases is not unusual and underscores how conservative banks are being with their money.

According to an *American Banker* survey of 150 technology managers at bank holding companies, technology spending at banks during 1991 grew at a rate of only 2%, a big drop from the 10% to 15% growth rates of the 1980s.

For IS decision makers like J. W. Pieper, executive vice president at First City, Texas-San Antonio, plans are geared to modifying current systems rather than buying new ones. Without knowing what's ahead, wholesale changes are just not viable.

"We wouldn't do things like change all of our ATMs because a new owner may not be compatible," Pieper says.

For the last 10 years, First City has been acquiring banks and consolidating its operations. The bank is also in the process of recapitalization.

At the First National Bank of Chicago, requests to upgrade systems or purchase new products are taking a back seat to more urgent IS concerns: The bank has been on the acquisition

Planning tips

- Create a modular, standardized system within your company to maintain flexibility.
- Buy rather than build. It's cheaper and it ensures compatibility with future partners or owners.
- Create new departments to handle conversions or standardization. This enables regular IS department to continue to run smoothly.
- Use contract labor to enable your department to grow and shrink on demand.

SMART Q

Is there a way for your business to turn

EDS helped River Forest Bancorp answer yes. Information technology applications developed and managed by EDS help River Forest Bancorp save $1 million a year in operating costs. The **holding company has used these savings to rapidly expand** its business through acquisitions. And improvements EDS made to the bank's systems are helping customers get better, faster service. As a result, deposits increased by $275 million from 1990 to 1991. In addition, River Forest's **stock price rose nearly 40% during 1991** and more than 250% since 1988.

EDS quickly converted the systems used by the three banks that River Forest acquired in 1990 to one com-

EDS is a registered trademark of Electronic Data Systems Corporation. © 1992 EDS.

trail and the IS department is converting new banks, making changes to meet regulations and fixing systems that aren't working, says Chuck Shoemaker, senior vice president at the bank. "The IS department is very busy," he notes.



HomeFed Bank's Seaman

For those pursuing new technology, purchases must have direct ties to the bank's core businesses; otherwise, they don't have a prayer. Being the technology leader isn't as important as making the best use of current products, says Seaman, whose goal is to keep HomeFed efficient for whoever purchases it.



Chase Manhattan's Lacovara

"Most of what we do for the future is to make us a viable business," Seaman says.

The new technology he is concentrating on includes a servicing system for the mortgage banking department and a system to manage bad assets.

The use of outsourcing and contract labor has lightened some IS chiefs' planning burden, especially in the area of staffing, which has enabled them to stay flexible at a reasonable cost, managers say.

In 1988, First City turned 100% of its processing activities over to Electronic Data Systems Corp. The third party oversees technology requests and recommendations and hires staff.

Bank executives say the contract enables the institution to deal with its changing needs in a way that a static staff could not. "We could never have a data processing staff that doubled overnight," Pieper says.

The use of contract personnel fits in with Banc One Services Corp.'s approach to turbulent times.

The bank does short bursts of planning through its conversion management group, which operates on a 180-day plan to brief Banc One computer operators, telecom staff and other bank personnel about upcoming acquisitions and imminent changes.

The group is also responsible for mapping the application systems within Banc One to incorporate new data and for moving files from the acquired bank to Banc One's system.

Ron Cybyske, senior vice president in information services, said the group has 25 core employees, but that number expands and contracts as needed.

Go with the flow

"We bring in anywhere from 20 to 25 [analysts and programmers] from the contract services company per month with the ebb and flow of our conversions," Cybyske says.

In the last year and a half, Banc One has completed almost 60 conversions.

Until the economic outlook brightens for the banking industry, the only certainty is that things are going to remain uncertain.

"The most together bank CIO I know makes decisions based on a series of operating principles, not on what the bank will look like in a year," says Philip Lawrence, vice president of CSC Index, Inc. in Cambridge, Mass.

Did you know?

Since the middle of the 1980s, between 100 and 200 banks have folded every year, according to the Federal Deposit and Insurance Corp. So far this year, 61 banks have failed. The FDIC has predicted that that number could reach 200 by the end of 1992.



Bredin is a free-lance writer based in New York.

Nothing funny about reducing costs

Planning for banks these days is like going through a fun house. You never know when the floor will drop out from under you or when you've taken a false turn. The key is that you've got to keep moving ahead. To make the situation even stickier, most IS chiefs are under pressure to cut costs. Here's how HomeFed Bank does it:

- **Economies of scale.** J. Carryl Seaman, HomeFed's CIO, looked at the layout of the IS facility to determine if moving equipment could boost productivity and cut costs. This could mean relocating a printer in a room with computer operators, thereby eliminating the need for a separate person to run the printer.
- **Staff absorption.** Seaman moved functions from the IS department back into other parts of the bank. For example, human resources took over determining when IS employees would be reviewed, and he put number-crunching for IS back into accounting.
- **Staff reduction.** Seaman talked to software vendors and industry peers to find out how many people are necessary to support certain technologies. He cut staff size to the bare bones, but he kept staff up in critical areas such as CICS.

UESTION:

operating costs into operating capital?

mon, streamlined system. It's used by seven of the holding company's eight banks. River Forest is now positioned to **provide customers with a broader range of services** in more locations.

"We've turned all our technology needs over to EDS," says Robert J. Glickman, President of River Forest Bancorp. "Doing so has helped us **lower costs and improve profits**." In fact, since 1988, on a nationwide basis, River Forest has consistently ranked first or second on return-on-equity among its peer group banks.

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IS leaders working to cure societal ills

BY THOMAS HOFFMAN
CW STAFF

With the Cold War over and the federal defense budget drastically reduced, Americans have been anxiously waiting for the Bush administration to channel its energies and new-found capital toward re-engineering the nation's education, environmental protection, health care and public transportation systems.

And as Capitol Hill debates the allocation of the peace dividend, a few visionaries have been studying how information technology can he applied toward improving many of these fields. For example, The Diebold Institute for Public Policy Studies, Inc. has been studying various infrastructures such as the nation's highway and health care systems for the past nine years.

John Diebold, chairman of the Bedford Hills, N.Y., research group, has spent the bulk of his 40-plus years in the information technology industry providing management consulting. Now, Diebold is applying his expertise toward improving society.

He is not alone. Throughout the country, information systems leaders are exploring ways and means of targeting their talents — technological, managerial and personal — at the task of shoring up crumbling national infrastructures and closing societal gaps.

Start locally

One chief information officer said he believes these projects, like others he has been involved in, work best when first approached at the local level. "The most significant change I have seen in the public sector is usually at the local level," said Jonathan Palmer, CIO at Barnett Bank of Jacksonville NA and chairman and chief executive officer of Barnett Technologies, Inc., the Florida-based bank's information services subsidiary. Palmer was a member of a local school board for eight years.

"As a school director," he said, "it was clear to me that public education can benefit from IT professionals lending their expertise to teaching or training." But first, he added, technologists and educators need to develop partnerships. "There'a a requirement for people in information technology to become better versed in education before leaping to conclusions with answers to these problems," Palmer noted.

"I think leaders in the private sector should become more involved, without getting totally frustrated by the bureaucracy involved with this," said Craig Goldman, CIO at The Chase Manhattan Bank NA in New York. "Professionals in all industries need to exercise more social conscience," he added.

"In the massive infrastructure erosion and deterioration, every person can make a contribution, regardless of what their professions are," noted David M. Carlson, senior vice president of corporate IS at Kmart Corp. While Carlson said he believes that volunteering is an important element to help improve decaying infrastructures, he does not think there should he a professional code of ethics making it obligatory for IS professionals, or anyone, to volunteer for such projects.

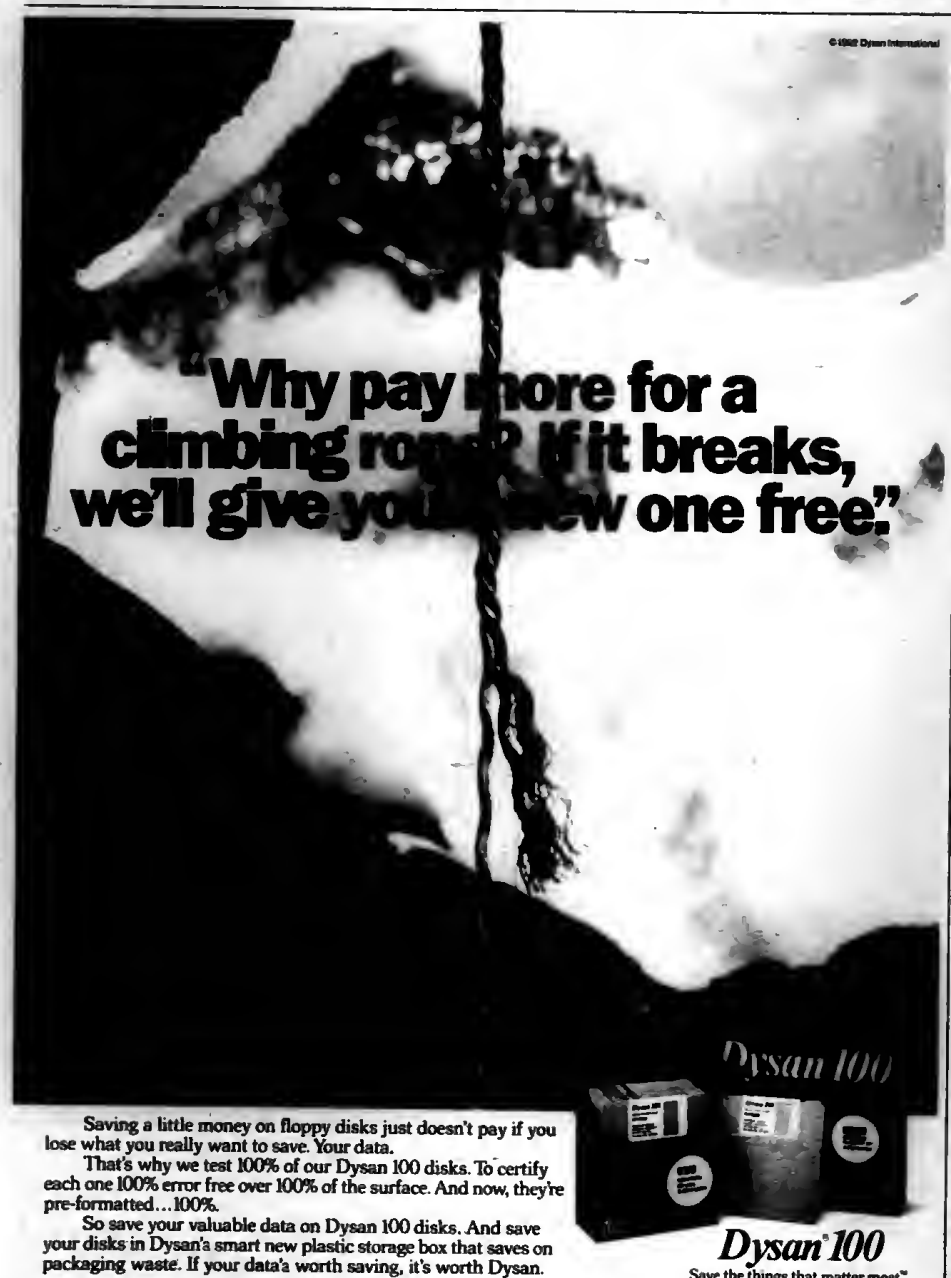
> "PROFESSIONALS IN all industries need to exercise more social conscience."
>
> CRAIG GOLDMAN
> CHASE MANHATTAN

"Our focus has first been to get a fix on what's happening here in improving infrastructures and how IT can he applied to that end," Diebold said. He added that the institute'a work includes comparisons among the U.S., the European Community (EC) and Japan, and how each entity is approaching these projects.

To date, Diebold said, both Japan and the EC have surpassed the U.S. in applying information technology toward improving a number of infrastructures. But he said he expects that to change as the result of greater public awareness, in addition to recent and pending legislation. For example, Diebold said the Federal Highway bill that Congress passed in December 1991 will boost the efforts to rebuild and improve the nation'a roadways.

Further studies conducted by The Diebold Institute concluded that roughly $300 billion is wasted each year on highway inefficiency. Although Diebold admitted that more work is needed to quantify the benefits of Intelligent Vehicle Highway Systems (IVHS), he reasoned that 15% to 25% savings may eventually he realized.

One example of IVHS technology is a bar-code scanning device used at toll booths. Such a tool would allow drivers to use smart cards to pay tolls — a move that could lead to reduced traffic congestion. In addition, analysts said they believe that many vehicles in the next 10 years will contain computer screens with maps to identify points of traffic congestion and provide alternate routes.



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INTELLIGENCE FILES



Items of interest from publications, speeches, surveys and research projects

What recovery?

■ With the economy still not quite in recovery, information systems departments are practicing caution in their hiring patterns. A recent CompuSearch poll of 400 companies found that fewer firms will add to their IS rosters during the second half of 1992 than were planning to do so in the first half of the year.

Only 30.5% of the companies surveyed said they would increase staff in the second half of the year, compared with 35.8% during the first half of the year.

Source: *"DP hiring slows during second half of 1992,"* DP Budget, *August 1992.*

Decade of change

■ A lot can happen in a decade. Researchers at the Sloan School of Management predict that in the year 2000, client/server will be the predominant technology, electronic mail will be as common as the telephone, and an international highway of business communication (the billion-bit backbone network) will be completed and in regular use.

The success of the information technology organization in the next 10 years will depend on how well an IS department takes responsibility for managing technology-driven change.

Source: *"Critical IT Issues: The Next Ten Years," by Robert I. Benjamin and Jon Blunt,* Sloan Management Review, *Summer 1992.*

Employers feel sting of stress injuries

■ Lawsuits are on the rise as the number of injuries allegedly caused by repetitive stress climb. Repetitive-stress injuries are responsible for 56% of all workplace injuries, with 185,000 cases reported in 1990, according to *Business Week*.

The majority of the complaints are filed by people who work as data processors, reporters and telephone operators. In the past, employees would file their suits against the manufacturers of the equipment because worker's compensation laws prohibit employees from going after their employers.

However, the Americans With Disabilities Act, which went into effect July 26, may make it easier for workers to sue employers if they have become disabled on the job.

Source: *"Repetitive Stress: The Pain Has Just Begun," by Michele Galen,* Business Week, *July 13, 1992.*

Friendly fire

■ A recent study conducted by three professors for *MIS Quarterly* reveals that IS executives are more worried about employee errors and acts of God than hackers, viruses or competitive spying. Asked what they considered to be the three biggest threats to the security of IS, 131 randomly selected top IS executives named accidental entry of bad data by employees, natural disasters and accidental destruction of data by employees. Threats of computer viruses and access to the system by hackers or competitors followed close behind, however.

Source: *"Threats to Information Systems: Today's Reality, Yesterday's Understanding," by Karen Loch, Houston Carr and Merrill Warkentin,* MIS Quarterly, *June 1992.*

Well, it sounds good

■ A recent national survey of 121 senior executives found that although 88% reported that their companies had used re-engineering to improve organizational performance, less than half knew precisely what the term meant.

Seventy-eight percent said their companies had used expanded automation for the same purpose, while 77% mentioned restructuring.

The companies surveyed consisted mostly of manufacturing, insurance and utility companies.

Source: *Telephone survey by Gateway Information Services, March 1992.*

Programming becomes women's work

■ The dearth of software professionals in Japan has eroded some old barriers. The number of working women in Japan has risen dramatically, and the biggest rise has been in computer-related work. The number of women doing programming and other software-related work has risen 250% in the last five years.

Source: *"Japanese Women Breach Job Barriers,"* Industry Week, *July 6, 1992.*

Compiled by Kelly E. Dwyer, assistant editor, features.

Check out the Marketplace Pages on Page 87.





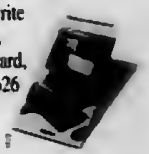
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Can canned plans help career climbers?

BY ALICE BREDIN
SPECIAL TO CW

Can an information systems career be systematically planned? A small but growing number of large U.S. organizations think so.

Taking a cue from the British, Baxter Healthcare Corp. and more than a dozen others are exploring standardized professional development for IS staffers.

"There is a complete lack of standards in the IS industry, which leads to a lack of understanding of what titles mean," says Ralph Jones, president of the Data Processing Management Association (DPMA), the 30,000-member Park Ridge, Ill.-based group that is promoting the idea in the U.S. "It also leads to employees not knowing how to move ahead in their careers."

The DPMA's new Professional Development Program (PDP) outlines skill sets and academic backgrounds required for more than 200 professional IS job titles, ranging from programmer to chief information officer.

Backers say the approach gives workers a clearer idea of what it takes to advance and encourages more, higher quality training. Motivation also increases, they say, and hiring is easier because standardized titles do not vary widely from company to company.



"When Company A is interviewing a person from Company B who says he was a senior programming analyst, the person at Company A doesn't really know what that means," says Bob Wysocki, president of TMS Group, a Worcester, Mass., management training company that developed the DPMA training program.

So far, 16 U.S. firms have made varying levels of commitment to the new program, including GE Nuclear, Ideal Industries, Mickler and Associates, The University of Notre Dame and the Internal Revenue Service.

Help for managers

"It is difficult to know when to promote someone and what skills they should have to move on to another job," explains Steve Westby, manager of IS at GE Nuclear in San Jose, Calif. "A program like this could make that job easier for managers."

Westby says his firm decided to try the program because the company needed help defining job descriptions for a 12-member network services group.

According to the DPMA, similar career-standardization programs are now used by nearly 100 companies in the UK, Europe and the Middle East. The idea is especially popular with British firms and some government agencies that have used since the mid-1980s a program that was developed by the British Computer Society that the PDP is modeled after.

"The program encourages participants to take control of their careers and learn new things," says Dawn Roberts, resource and recruitment adviser for Shell-Mex House. The London-based firm has used the plan since 1989.

Despite some early resistance from fears of increased administrative work loads, Roberts says the effort is now seen as a valuable adjunct to company training programs. Trainees seem enthusiastic about learning new skills, which can be used anywhere in the industry, she adds.

The first U.S. company to purchase the entire DPMA program is Baxter Healthcare. The Deerfield, Ill., firm began implementing the structure in January at its North Cove, N.C., plant.

"We believe that training and development are key to getting and retaining good technical people," explains Richard Parrow, information services manager.

Eleven IS staff members — three supervisors and eight employees — now participate for a cost of about $5,000, Parrow says.

Varied options

Companies can buy the DPMA program in two ways. For $1,495, they can acquire the Industry Structure Model, which can be tailored to internal training and development needs.

Or, for a $3,500 basic flat fee plus a site fee of $1,500, they can buy the complete program, including training and materials, and consulting from the DPMA and its members. In addition, there is a fee for each participant, ranging from $100 to $150 per person, depending on the number of participants.

The idea of standardized career planning is also drawing interest in academia.

Lou Berzai, a professor specializing in business computing at Notre Dame, plans to use the PDP to teach students about job skills and career opportunities.

For more information on the PDP, contact the DPMA at (708) 825-8124.

Bredin is a free-lance writer based in New York.

How it works

Supervisors play a key role in the DPMA's new career standardization program. Here's a quick look at how the typical process proceeds: As preparatory steps, a company must appoint a coordinator, identify program participants, process DPMA applications and schedule supervisor training.

Once supervisors have been trained, a supervisor helps an employee participant create an individual training plan for the development "cycle" (usually one year).

With supervisor guidance, the employee lists tasks in four categories: academic preparation, job experience, on-the-job training and professional development. Employees then track their progress in individual log books.

The career motivation portion of the professional development program assigns a series of tasks to each employee that charts a course for employees to move from one job — or cell, as the development program calls it — to another.

After a company begins the program, supervisors participate in a one-day training session. Supervisors are normally the employee's daily supervisor, but not always.

The DPMA says the program requires a time commitment of about three hours during the year for each participant.



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Get exposed to client/server

Fast Track is a twice-monthly column dedicated to answering questions on career directions. This week's guest adviser is Chick Bisberg, president of Two-Party Systems, Inc., an information technology recruitment firm in Livingston, N.J.

Q I am a systems analyst with s background in large IBM mainframe applications development, but I'd like to take my career toward the client/server environment. During the next two to three years, what can I do to make my way into the client/server arena?

A Get acquainted with the systems and user managers in your firm who are currently developing or looking into local-area network/server technology, and discuss the chance to work on their projects citing your C skills and long-term interests.

Beyond that, try to become familiar with pertinent LAN/server software (get hands-on experience if you can) through such channels as vendors or industry shows.

Prepare for internal opportunities, and position yourself for the future.

Q I'm a programmer/analyst with 25 years' experience with NCR Corp.'s proprietary language and banking applications. My job is about to end. How can I make my resume look appealing to a non-NCR company?

A Your resume must be factual, but there's no harm in highlighting each of the banking applications areas you've been involved in, in order to emphasize the transferability of your knowledge to another bank. Also, be sure to mention any leadership roles you've played, as well as any non-NCR hardware or software you know well.

Finally, remember that many NCR shops also use other brands of computers on which you might be trained and get worthwhile experience for the future.

FAST TRACK
CAREER ADVICE FOR THE '90s

Q I am s data processing manager. The employees at my company receive average annual raises that are 2% to 3% higher than those of managers. Is this normal?

A The percentages you quote do seem s bit skewed to non-managers. You should consider discussing the perceived inequity with managers at other local companies to gain perspective on how their organizations handle the issue. Do this discreetly, and if you decide that your firm's policies don't make economic or managerial sense to you, maybe it's time to look around. Remember, though: You may have perks as a manager that your subordinates don't enjoy.

Q I have completed a course at a local programming school and am working part-time toward a bachelor's degree in computer science. I feel I have the talent to be an applications programmer, but I haven't had much luck in obtaining an entry-level position. What can I do to improve my situation?

A Look for opportunities your current skill set qualifies you to handle, and emphasize your eagerness to move into programming during each interview. Focus on companies that have hired graduates of your programming school before, and complete your bachelor's degree on time. Be sure to put your current degree program and your programming school training at the top of your resume.

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TIP of the MONTH

Being too perfect can hurt an IS professional

➤Being s perfectionist can be an impediment because you fiddle with the details for so long that you miss targets. The best way to put that perfectionism to work is to build enough time into the project schedule to allow for a post-implementation review.

Tim Schwab, director, systems program and operations
Health Midwest, Kansas City, Mo.

➤A perfectionist can get bogged down in the details and lose sight of competitiveness and changing technology. Of course, to go too far in the opposite direction means there would be no reliable implementation of systems. The trick is to strike s balance between the importance of details and deadlines.

Rob Diehl, manager of telecommunications — Loveland
Hewlett-Packard Co., Loveland, Colo.

➤Perfectionists have a tendency not to let the final product go. They want to continually revise and change it, which prevents them from completing projects on time.

Don Livingston, technical support manager
Dallas Morning News, *Dallas*

➤The price you pay for being a perfectionist is time. I'd rather spend an extra day on a project and sleep at night. I haven't seen perfectionism hurt many IS careers, but I've seen how inadequate research and inattention to detail can cause problems.

Tim Riddell, director of technology
FMC Corp., Dallas

➤I consider myself a perfectionist, and it's only helped my career. Because of my willingness to pay attention to details I've had the opportunity to be cross-trained on all the systems within the organization.

Dennis Pinon, system control center technician
Nordstrom, Inc., Seattle

Compiled by Jill Vitiello, a free-lance writer based in East Brunswick, N.J.

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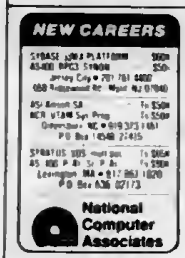
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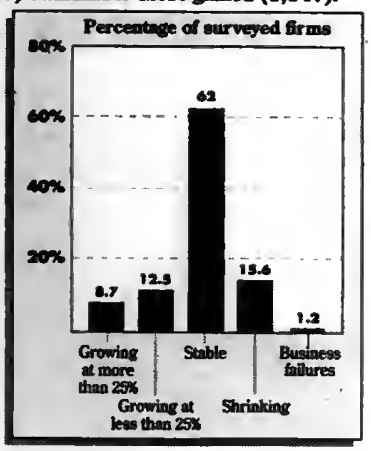
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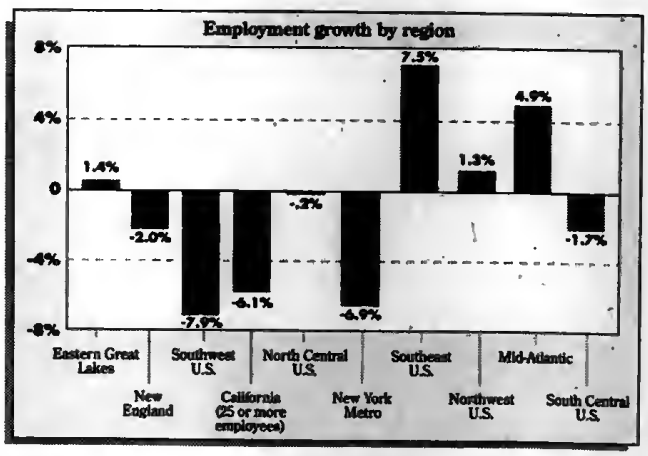
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Computerworld/Corptech Career Index

Photonics – While the number of firms growing (68) actually outnumber those shrinking or failing (54), the number of employees lost (1,577) outnumber those gained (1,147).







Confessions of a hardware salesman



BY ANONYMOUS
SPECIAL TO CW

I am a computer hardware salesman, and I've had to change a lot in the past couple of years. Business is tight. Competition is cutthroat. A guy like me can barely afford a decent European automobile anymore.

Remember the early '80s? I took orders like a shorthanded waitress. Now, the only time I hold a pen is to demo a pen-based system, which never works with the customer the way it did in my office that morning.

But I've survived for 17 years. I've survived selling in Silicon Valley. I've survived recessions, cutbacks and takeovers. To do it, I've had to be a little "flexible." In these schmooze-or-lose '90s, a salesman has to know the tricks of the trade.

And if you promise not to tell anyone, I'll let you in on a few of them. They're not dishonest. They're not unethical. They're just a shot in the arm when the tape drive I'm selling is such a dog that 10 minutes after it's installed it falls over backward and crushes an operator.

Remember, I don't actually follow these practices. Neither does anyone at my company. But I'm convinced that my competition does — 30 minutes after I leave, and all day before I get there. So watch out!

The Pet Store Close.
You know you want the equipment. I know you want the equipment. But you're a little reluctant. Maybe it costs a lot. Maybe you didn't make room for it in the budget. Or maybe it's because the model I just demonstrated has smoke coming out the back.

So here's where I try the Pet Store Close: Once you take that puppy or kitten home, nine times out of 10 it's home for good. "Look, I'll leave it here with you. Use it for as long as you like. If you change your mind, we'll come back and deinstall it, decable it, rip the thing right out of the raised floor, repack it and ship it back to the plant, at the meager cost [to you] of about $14,000. But we can work out those details later. So what was that purchase order number again?"

Disparage the competition.
Disparagement? It's unprofessional. It's misleading. I would never disparage the competition.

Unless I'm losing. Sometimes a little fear, uncertainty and doubt can go a long way. Look at it this way: If you were about to buy a superserver from the competition, and I just happened to know that Leona Helmsley was about to buy that company, wouldn't you want to know about it? Heck, I'd tell you. It's my job to tell you stuff like that, even when it's true.

Hardware first!
Every company has a wise guy who thinks you should first buy the software and then buy the hardware. He thinks you should first find the right application and then find something that will run it. He'll even propose that cheap, efficient software is better than outrageously expensive extra memory.

Don't listen to this guy! This kind of attitude could cripple the industry. Nobody sees software. But hardware is right there. You can smell it. You can touch it. Every 13-year-old kid has software at home. But a water-cooled, nine-way, 90 million instructions per second processor — those babies look great, even when they're down.

So when I meet up with someone like this, I usually try to get him transferred to Kansas.

The Demo Shell.
Speaking of software (gosh, I really hate software), once in a while I've been known to demo some, if it helps me sell a bunch of hardware.

That's where the Demo Shell comes in. When I show a prototype system, my screens work. My function keys work. I can show Help text, color and a pie chart or two.

But you should always notice who's driving, who's sitting at the keyboard or messing with the mouse. Me. Always me. Because 99% of the time, this thing is just a shell, and if I haven't shown you a function or 12, it's because we have not written them yet.

But if I drive, you'll never know that, and by the time you do, we'll hopefully have the code ready, or know when it will be ready, or at least I'll have delivered the hardware and cleared the check.

Buy now.
There's a new product announced every day, and you want to wait before you buy. But I've got a warehouse of soon-to-be-no-longer-current products, and I get megabonuses for selling the stuff.

So I need to persuade you to buy today rather than three days from now, when we announce the follow-on product with twice the performance for half the price. "You can't sit on the sidelines forever. If there's a benefit now, why not take advantage of it?"

What's the worst that can happen? I sell you a big-bucks, big-commission box that is obsolete before the check clears? If your chief financial officer understands the industry, he won't blow his stack. We can always march into his office and tell him that now we'll need the big-bucks, big-commission upgrade.

The last guy wins.
Finally, here's the best trick of all. I always look for one of those two-year sales cycles. I let the competition spend the big bucks on demos. I let them foot the bill on benchmarks. I let them convince the CFO that he needs the system, a direct-access storage device, tapes, personal computers and network and training services.

And then, in month 24, for the first time, I show up. I wriggle my way into your office, and I demo my "me-too" system.

Nothing better. Nothing fancy. Might not even meet all your requirements. But you're so tired and cranky and anxious to get started, you're ready to buy anything.

And since I haven't yet spent a dime on marketing or trials or benchmarks or anything, I discount the heck out of my price. The CFO winds up overjoyed. The competition winds up blindsided. I wind up with a sizable commission check. And you wind up with a mediocre system, a handshake and our 800 support number in Nebraska — "Please hold for the next available representative."

The writer is a hardware salesperson in a major Midwestern city.

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The following items are the criteria by which the proposal will be evaluated. These criteria are listed in their order of importance with the first criteria listed as being the most important.

1. Total project cost (inclusive of all MTA internal costs).
2. Compliance with the requirements of the Technical Specification section. The reserve capacities of the primary and secondary "Hot Sites" (e.g. CPU, DASD, Telecommunications, power.). The vendor's policy on technological upgrades and the ability to service the future MTA needs.
3. The ability of the MTA to access the "Hot-Site" (for testing or disaster recovery purposes) regardless of the type or location of the disaster.
4. Proximity of the primary "Hot Site" to the MTA Data Center.
5. The availability and ability of Vendor staff to assist MTA staff as required in drills and actual disasters. The stability and technical acumen of the vendor's staff at the "Hot Site".
6. The number of secondary sites, which are compatible to MTA'S requirements, available within the vendor's organization in the continental United States and their locations related to the MTA Data Center and the guaranteed availability of them.
7. The Vendor's past experiences in providing Disaster Recovery Services of equivalent magnitude.
8. Responsiveness to the RFP, this criteria will include, but not be limited to, providing the information requested, providing the information in the format requested and acceptance of MTA Terms and Conditions.

RFP NO 2-01-92102-0 DATE/TIME 9/30/92,4PM
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Sealed proposals will be received by CDPA, 301 N. Lamar St., 301 Bldg. Suite 508, Jackson, MS 39201 for the following:

RFP No. 2236, due Thurs. 9/10/92 at 3:30 p.m. for technical services for the management and assistance of a project to upgrade the AMS Governmental Financial System Release 6 to Release 8 for the DEPARTMENT OF FINANCE AND ADMINISTRATION. No Charge.

RFP No. 2248, due Wed. 9/23/92 at 3:30 p.m. for payroll software for the DEPARTMENT OF EDUCATION. No Charge.

Detailed specifications for each RFP with a charge may be obtained by submitting a written request accompanied by the appropriate payment. No phone requests will be accepted. NOTE: Valid forms of payment are corporate checks on a Mississippi bank, certified check, or POSTAL money order made out to Central Data Processing Authority. No cash or out-of-state checks. For RFPs with no charge call Kelli Brown @ 601-359-2604. The CDPA reserves the right to reject any and all bids and proposals and to waive informalities.

REQUEST FOR QUALIFICATIONS

The Sewerage and Water Board of New Orleans is soliciting statements of qualifications from organizations capable of providing data processing facilities management for its Information Systems Department. The company providing this service must be qualified and experienced with the latest technology in the field. The scope of the work consists of three major areas for a Mainframe and PC/Network environment: operations, maintenance and development. At present, the Board's intention is to continue to use its current hardware, software and applications.

The major operation of the Sewerage and Water Board of New Orleans is providing water, sewerage and drainage services for the City of New Orleans.

Parties interested in obtaining the RFQ should contact the Sewerage and Water Board's Purchasing Department by phone at (504) 585-2124 or by FAX at (504) 585-2190.

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"In computer trade press advertising, Computerworld Direct Response Cards are first in quantity and quality - and lowest in cost per qualified lead."

- Charles A. Mills
President
Firesign Computer Company

Firesign Computer Company is a data communicatians saftware developer with 17 years in the business. Having tripled in size during the past twa years, this San Francisco-based campany retains rep firms an the East Coast and in Europe ta service a warldwide custamer base that extends as far as Australia and New Zealand. For President Chuck Mills, finding new sales praspects far the company's flagship product Outbound means advertising in *Computerworld Direct Response Cards* every manth.

"Outbound's claim ta fame is unattended file transfer. Supparting MVS and VM mainframes and OS/2, DOS, and Windows PC networks, it is the anly product whase main thrust is unattended mainframe-ta-PC file transfer. Virtually invisible ta the PC user, Outbound saves time, pravides flexibilty, and eliminates training - all while autamatically ensuring consistent reliability.

"By its very nature, Outbound has a crass-industry and crass-functianal appeal, with patential users ranging fram mainframe network saftware managers ta infarmation center professionals to praject analysts. So when it cames ta targeting our audience, we need a broad-spectrum advertising vehicle with a broad reader base. It's na surprise, then, that *Computerworld Direct Response Cards* have praven ta be aur best choice.

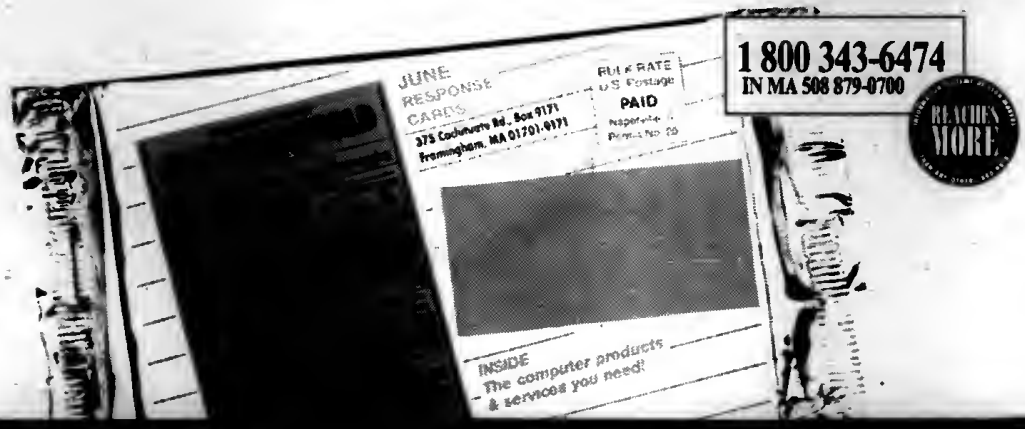
"In computer trade press advertising, *Computerworld Direct Response Cards* are first in quantity and quality - and lowest in cast per qualified lead. They cansistently generate aver 70 responses every month - and a full two-thirds are very qualified leads. Some months, we've even received as many as 120 responses. On a cost-per-lead basis, *Computerworld Direct Response Cards* are alsa our best value dollarwise.

"As an added benefit, I see *Computerworld Direct Response Cards* having an equalizer effect. Here, unlike ather advertising vehicles, companies with smaller advertising budgets like ours stand out and make just as big an impact as much larger campanies. *Computerworld's* large circulatian alsa gives us reach ta the right cross-section af patential buyers. And, since we cantinue to receive respanses for many weeks after each deck hits, we obviously benefit fram bath a lang shelf life and an active pass-along readership.

"As lang as *Computerworld Direct Response Cards* remain our top lead generator, we'll definitely maintain our advertising presence in every deck. Looking ahead, I alsa foresee expanding our *Computerworld Direct Response Card* advertising should we develop a new data communicatian saftware product requiring similar expasure."

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STOCK TRADING INDEX



Industry Almanac

INITIAL PUBLIC OFFERINGS

The Houston-based investor relations firm of Sommers & Associates reported that during the second quarter of 1992, computer-related initial public offerings (IPO) sprung upward in both number and dollar volume. Increasing more than 160%, dollar volume totaled $1.1 billion, compared with $425 million in the first quarter. Eighteen computer-related IPOs were completed. First Data Resources, Inc. — the credit-card processing spin-off from American Express Co. — accounted for $770 million of the total raised. Noncomputer IPOs were down 4% in number and 15% in dollar volume for the quarter. A total of 149 deals from all industries raised $8.3 billion in the quarter, compared with 155 completed IPOs with a total value of $9.8 billion in the first quarter.

LISA DAVIDSON

Newly public

A sampling of second-quarter IPOs

	IPO date	Amount raised ($M)	Offering price	Recent share price
Mentor Designs, Inc.	May 13	$3.5	$3.50	$4.50
Chipsoft, Inc.	April 3	$41.2	$12.50	$11.00
Crossroads Corp.	June 18	$29.3	$11.00	$16.00
Datawatch Corp.	May 28	$5.0	$5.00	$3.50
Equitrac Corp.	June 11	$16.5	$11.00	$10.63
First Data Resources, Inc.	April 9	$770.0	$22.00	$27.75
Kronos, Inc.	June 5	$18.0	$12.00	$13.50
MicroTouch Systems, Inc.	June 30	$18.2	$13.50	$18.75
MultiFrames Systems, Inc.	June 4	$27.0	$9.00	$9.75
Network Computing Devices, Inc.	June 4	$24.0	$12.00	$12.75
Optical Data Systems, Inc.	May 21	$17.1	$9.00	$13.75
Sapiens International Corp.	May 29	$33.4	$11.50	$11.63
Star Electronics	May 7	$36.0	$12.00	$7.00
Supermac Technology	May 15	$18.0	$9.00	$10.25
The Learning Co.	April 28	$22.0	$11.00	$11.25
V-Mark Software, Inc.	May 14	$16.2	$9.00	$7.50
Wellfleet Resources Corp.	June 24	$5.4	$5.50	$5.25

Source: IDD Information Systems, Sommers & Associates

Computerworld Friday Stock Ticker

CLOSING PRICES FRIDAY, AUGUST 7, 1992

TOP PERCENT GAINERS

Iomega Corp	31.82
Cray Computer	21.74
Meca Software (L)	18.75
Penril Data Comm. Ntwks	17.65
Gateway Communications	17.39
Hogan Systems Inc.	17.14
Quarterdeck Office Sys	15.79
Network General	15.75

TOP PERCENT LOSERS

Egghead Discount Software	-39.19
Marisel	-31.40
Hewlett-Packard Co.*	-19.50
Zeos International Ltd.	-18.42
Intelligent Electronics	-14.12
Borland Int'l Inc.* (L)	-13.61
Ultimate Corp	-12.50
Fibronics Int'l Inc.	-12.50

TOP DOLLAR GAINERS

Harris Corp	2.63
Iomega Corp	1.75
Network General	1.50
Standard Microsystems Corp	1.38
Boole & Babbage	1.25
Chipcom Corp	1.25
Komag Inc	1.25
General Motors E (EDS)*	1.25

TOP DOLLAR LOSERS

Hewlett-Packard Co.*	-14.63
IBM*	-7.63
Egghead Discount Software	-7.25
Borland Int'l Inc.* (L)	-6.50
Novell Inc.*	-6.13
BMC Software Inc.	-4.25
Apple Computer Inc.*	-3.38
Marisel	-3.38

Exch	52-Week			Aug. 7 Close	Wk. Net Change	Wk. Pct. Change
Communications and Network Services						Up 0.38%
OTC	15.00	6.75	3COM Corp.*	11.38	-0.75	-9.19
NYS	69.88	56.25	American Info Techs Corp.* (H)	68.00	-0.50	-0.72
NYS	44.88	32.88	AT&T*	43.63	-0.38	-0.85
OTC	4.25	1.00	Artel Communication Corp.	1.25	0.00	0.00
NYS	50.63	40.25	Bell Atlantic Corp.	47.38	-0.13	-0.26
NYS	53.25	43.38	Bellsouth Corp.	52.63	-0.13	-0.24
NYS	7.25	4.13	Bolt, Beranek & Newman	4.50	0.00	0.00
NYS	85.88	38.63	Cabletron Systems	54.50	0.00	0.00
OTC	31.00	16.50	Chipcom Corp.	25.50	1.25	5.15
OTC	53.50	16.63	Cisco Systems Inc. (H)	50.13	-3.25	-6.09
OTC	35.25	7.00	Compression Labs Inc. (L)	7.50	-0.50	-6.25
OTC	3.38	0.88	Data Switch Corp.	2.00	-0.16	-9.58
NYS	23.63	12.38	Digital Comm. Assoc.*	16.88	-0.25	-1.31
OTC	17.50	9.00	Digital Systems Int'l Inc.	9.00	0.00	0.00
OTC	7.00	3.63	DSC Communications	6.63	0.63	10.42
OTC	10.88	4.75	Fibronics Int'l Inc.	5.25	-0.75	-12.38
OTC	37.50	10.50	Fibronet Corp.	14.88	-0.38	-2.46
OTC	3.38	1.13	Gandalf Technologies Inc.	2.75	0.06	2.31
OTC	2.25	0.88	Gateway Communications	1.69	0.25	17.39
NYS	5.50	2.13	General Datacomm Inds.	3.75	0.00	0.00
ASE	5.88	0.50	Go Video	3.00	0.13	4.35
NYS	35.00	28.13	GTE Corp.*	34.88	0.00	0.00
NYS	70.63	50.00	ITT Corp.	67.75	0.00	0.00
OTC	36.13	25.25	MCI Communications Corp.	33.38	-0.38	-1.11
OTC	14.50	2.25	Microcom Inc.	3.63	0.25	7.41
NYS	18.25	9.50	Network Equipment Tech.*	10.38	0.25	2.47
OTC	25.50	6.75	Network General	11.00	1.50	15.79
OTC	12.00	5.50	Network Systems Corp.	12.25	0.75	6.52
OTC	17.88	5.50	Newbridge Networks Corp.	16.13	-0.88	-5.15
NYS	49.25	33.75	Northern Telecom Ltd.*	35.75	0.88	2.51
OTC	65.00	25.50	Novell Inc.*	48.88	-8.13	-11.14
NYS	53.00	37.50	Nynex Corp.* (H)	91.50	1.50	1.81
OTC	37.50	16.50	Octel Communications Corp.	23.50	-0.50	-2.06
OTC	9.88	4.00	Penril Data Comm. Ntwks.	5.00	0.75	17.65
OTC	53.00	17.00	Picturetel Corp.	17.50	-1.50	-7.89
OTC	18.75	6.75	Proteon Inc.	14.00	-0.63	-4.27
NYS	26.25	11.63	Scientific Atlanta Inc. (H)	25.75	0.25	0.98
NYS	66.38	51.50	Southwestern Bell Corp. (H)	65.38	-0.50	-0.75
NYS	27.13	20.75	Sprint Corp.	23.38	0.13	0.54
OTC	13.75	4.00	Standard Microsystems Corp.	13.00	1.38	11.63
OTC	35.50	14.25	Synoptics Communications (H)	33.75	-1.38	-3.91
NYS	40.00	32.88	US West Inc. (H)	39.13	-1.38	-3.48
OTC	41.25	22.25	Wellfleet Communications	38.25	-0.75	-1.92
PC and Workstations						Off 5.03%
OTC	15.00	4.50	Advanced Logic Research	4.50	0.00	0.00
OTC	70.00	42.75	Apple Computer Inc.*	43.38	-3.38	-7.22
OTC	32.25	12.00	AST Research Inc.*	13.00	-0.88	-6.31
NYS	19.25	10.00	Commodore Int'l	9.50	0.13	1.30
NYS	37.50	22.13	Compaq Computer Corp.*	25.13	-0.38	-1.27
OTC	29.00	13.91	Dell Computer Corp.	22.75	-0.25	-1.09
OTC	7.75	2.13	Everex Systems Inc.	2.89	-0.06	-2.25
NYS	34.00	21.25	Harris Corp.	31.13	2.63	9.21
NYS	85.00	44.63	Hewlett-Packard Co.*	58.88	-14.63	-19.90
NYS	29.75	14.13	Silicon Graphics	21.38	-0.88	-3.93
OTC	35.88	20.75	Sun Microsystems Inc.*	25.00	-1.75	-6.54
NYS	31.25	22.50	Tandy Corp.*	24.00	-0.75	-3.03
NYS	11.13	5.13	Zenith Electronics	8.88	-0.63	-8.33
OTC	25.50	3.88	Zeos International Ltd.	3.88	-0.88	-18.42
Large Systems						Off 0.20%
ASE	20.63	11.63	Amdahl Corp.*	13.88	0.25	1.83
NYS	18.13	7.50	Cendian Corp.	15.75	0.38	2.44
NYS	16.38	5.75	Convex Computer	8.50	0.00	0.00
OTC	19.63	1.88	Cray Computer	3.50	0.63	21.74
NYS	52.25	23.75	Cray Research Inc.*	25.13	0.00	0.00
NYS	22.50	7.13	DataGeneral Corp.	8.38	-0.63	-9.94
NYS	66.00	33.25	Digital Equipment Corp.*	37.25	-2.00	-5.10
NYS	106.38	61.63	IBM*	87.13	-7.63	-8.05
NYS	121.25	91.25	Matsushita Electronics (L)	95.00	-2.50	-2.56
OTC	19.75	9.50	Pyramid Technology	10.00	0.25	2.56
OTC	17.88	7.50	Sequent Computer Sys.	16.50	0.38	2.33
OTC	18.38	5.00	Sequoia Systems Inc.	5.75	0.25	4.55
NYS	54.25	34.13	Stratus Computer Inc.*	46.88	0.88	1.90
NYS	15.13	9.50	Tandem Computers Inc.*	10.63	-0.63	-5.56
NYS	11.75	3.63	Unisys Corp.*	9.63	-0.63	-6.10
ASE	7.50	1.75	Wang Labs Inc. (D)* (L)	2.25	0.00	0.00
Software						Off 2.05%
OTC	68.50	35.75	Adobe Systems Inc. (L)	35.88	-2.13	-5.59
OTC	13.25	2.50	Al Corp.	4.63	-0.13	-2.63
OTC	45.00	11.50	Axtus Corp.	13.25	-1.38	-9.40
OTC	19.75	3.63	American Software Inc.	13.88	-0.13	-0.89
OTC	20.00	8.50	Ask Computer Systems	14.75	-0.38	-2.48
OTC	57.25	23.25	Autodesk Inc.	41.00	-1.50	-3.53
OTC	37.75	8.25	Bachman Info. Systems	10.25	0.00	0.00
OTC	42.50	29.00	BGS Systems Inc.	37.25	0.75	2.05
OTC	79.00	37.25	BMC Software Inc.	49.50	-4.25	-8.06
OTC	20.50	9.00	Boole & Babbage	10.50	1.25	8.65
OTC	88.75	35.00	Borland Int'l Inc.* (L)	41.25	-6.50	-13.61
OTC	11.25	3.63	CE Software	4.88	-0.25	-4.88
ASE	14.38	8.50	Cheyenne Software Inc.	12.00	0.25	2.13
OTC	20.38	7.25	Cognos Inc.	8.38	-0.38	-4.29
NYS	17.00	7.50	Computer Associates*	14.38	-0.13	-0.86
OTC	21.50	8.50	Comshare Inc.	9.88	-0.25	-2.47
OTC	47.88	9.50	Easel Corp.	7.25	-0.75	-5.38
OTC	25.50	11.50	Group I Software	17.50	1.00	6.06
OTC	6.63	2.50	Hogan Systems Inc.	5.13	0.75	17.14
OTC	38.25	18.50	Information Resources	24.25	-0.50	-2.02
OTC	38.25	5.50	Informix Corp. (H)	38.25	-1.50	-3.97
OTC	22.75	12.50	Intergraph Corp.	14.25	-0.75	-5.00
OTC	15.00	5.13	Interleaf Inc.	8.75	-0.88	-9.09
OTC	20.25	9.50	Intersolv Inc.	15.00	-0.13	-0.83
OTC	30.00	10.50	Knowledgeware Inc.	12.25	-1.25	-9.26
OTC	45.25	20.25	Legent Corp.*	40.25	0.25	0.63
OTC	40.75	15.50	Lotus Development*	17.25	-1.00	-5.48
OTC	7.38	1.88	Meca Software (L)	2.38	0.38	19.75
OTC	22.25	8.50	Mentor Graphics	7.75	-0.25	-3.13
OTC	20.50	8.50	Micrografx Inc.	9.38	0.00	0.00
OTC	88.84	51.34	Microsoft Corp.*	70.75	-2.00	-2.75
OTC	21.13	6.88	Oracle Corp.*	17.88	-0.75	-4.03
OTC	41.25	14.63	Parametric Technology	39.00	-1.50	-3.70
OTC	11.00	3.50	Phoenix Technologies	4.88	0.25	5.41
OTC	25.25	11.00	Platinum Technology	16.00	-0.75	-4.48
OTC	48.50	27.75	Progress Software Corp.	39.50	-0.75	-1.86
OTC	25.63	4.00	Quarterdeck Office Sys.	5.50	0.75	15.79
OTC	32.75	10.25	Rainbow Technologies Inc.	18.00	-1.00	-5.26
OTC	28.25	8.75	Rasterops	10.50	-0.75	-6.67
OTC	17.25	5.38	Ross Systems	7.25	-0.75	-9.38
OTC	26.25	7.50	Software Publishing Corp.	8.75	-0.75	-7.89
OTC	6.50	2.00	Software Toolworks Inc.	2.50	-0.25	-9.09
OTC	7.25	1.78	Spinnaker Software	2.75	-0.25	-8.33
OTC	16.50	6.25	Stairs of the Art	6.75	-0.50	-6.90
NYS	25.25	12.13	Sterling Software Inc.	17.50	1.00	6.06
OTC	30.00	13.00	Struct. Dynamics Research	14.00	-1.00	-6.67
OTC	31.75	15.00	Sybase Inc.	23.13	-1.25	-4.12
OTC	51.00	18.00	Symantec Corp.	16.63	-2.38	-11.31
NYS	15.50	5.25	Systems Center Inc.*	7.75	1.00	14.81
OTC	34.25	9.88	System Software Assoc.	26.13	-0.13	-0.48
OTC	23.75	14.50	Walker Interactive Systems	16.75	0.00	0.00
OTC	9.63	2.13	Wordstar	2.88	-0.06	-2.36
Semiconductors						Up 0.03%
NYS	21.50	7.38	Advanced Micro Devices	9.38	0.38	5.63
NYS	11.13	7.00	Analog Devices Inc.	9.88	0.13	1.28
OTC	14.13	8.75	Atmel Corp.	8.50	-0.13	-1.45
OTC	14.13	4.25	Chips and Technologies (L)	5.13	0.13	2.50
NYS	22.63	7.38	Cypress Semiconductor Corp.	9.78	-0.50	-9.41
NYS	10.25	8.25	Dallas Semiconductor	10.25	0.38	3.80
OTC	88.75	28.50	Intel Corp.*	58.63	-1.13	-1.88
NYS	9.88	5.50	LSI Logic Corp.	5.88	0.00	0.00
NYS	22.38	11.13	Micron Technology	16.00	-0.25	-1.54
NYS	97.75	54.00	Motorola Inc.* (H)	84.63	-1.00	-1.17
NYS	11.50	3.88	National Semiconductor*	11.00	0.75	7.32
OTC	27.00	6.25	Sierra Semiconductor (L)	10.00	-0.13	-1.23
NYS	42.38	26.00	Texas Instruments* (H)	38.75	-2.13	-5.07
OTC	10.50	5.88	VLSI Technology	9.75	0.25	2.63
OTC	9.75	2.13	Wafer Scale	3.13	0.00	0.00
ASE	5.63	2.00	Western Digital Corp.	4.50	-0.13	-2.70
OTC	32.50	17.25	Xilinx	22.00	-0.75	-3.30
OTC	11.50	4.63	Zilog Inc.	9.75	0.00	0.00
Peripherals and Subsystems						Up 0.37%
OTC	10.00	0.75	Archive Corp.	7.75	0.00	0.00
OTC	24.75	11.25	Banctec Inc.	24.75	0.13	0.51
OTC	23.50	7.00	Cambex Corp.	11.88	-1.13	-8.65
ASE	12.25	4.88	Cognitronics Corp.	10.75	0.00	0.00
NYS	23.88	12.50	Conner Peripherals*	20.38	-1.13	-5.25
ASE	18.66	3.72	Dataram Corp.	15.38	-0.50	-3.15
NYS	19.25	5.88	EMC Corp.	17.88	-0.63	-3.38
OTC	9.00	4.75	Emulex Corp.	7.75	0.75	10.71
OTC	25.00	14.25	Evans & Sutherland	15.50	0.00	0.00
OTC	40.63	18.25	Exabyte	30.50	-0.75	-2.40
OTC	27.25	18.75	Intelligent Info. Systems	24.00	-0.50	-2.04
OTC	11.25	6.63	Iomega Corp.	7.25	1.75	31.82
OTC	34.75	12.00	IPL Systems Inc.	15.25	0.00	0.00
OTC	24.50	10.75	Komag Inc.	18.25	1.25	8.33
OTC	14.00	2.75	Maxtor Corp.*	13.00	0.25	1.96
OTC	42.00	9.75	Micropolis Corp.	10.00	-0.38	-3.61
NYS	100.88	63.50	3M Co. (H)	100.25	0.25	0.25
OTC	7.50	3.50	Printronix Inc.	6.50	0.00	0.00
NYS	38.75	7.00	QMS Inc.	8.25	0.50	6.45
OTC	26.00	9.88	Quantum Corp.	13.63	-0.13	-0.91
OTC	12.75	9.25	Radius Inc.	10.63	-0.88	-7.61
NYS	12.88	5.88	Recognition Equipment	8.13	-0.13	-1.52
OTC	13.13	5.38	Reson Inc.	9.25	-0.25	-2.63
OTC	17.63	7.25	Seagate Technology*	14.88	-0.50	-3.25
NYS	76.00	36.13	Storage Technology*	53.38	2.50	7.29
NYS	50.88	19.00	Tektronix Inc.	16.63	0.25	1.38
NYS	92.25	52.63	Xerox Corp.	74.88	0.13	0.17
Services						Off 4.93%
OTC	16.00	11.88	American Mgmt. Systems*	17.50	0.38	2.19
NYS	5.38	2.88	Anacomp Inc.	3.50	0.13	3.70
OTC	19.00	12.25	Analysts Int'l	18.75	0.00	0.00
OTC	48.00	30.25	Auto Data Processing*	44.25	-0.63	-1.39
NYS	24.38	12.50	Comdisco Inc.*	19.50	-0.25	-1.27
OTC	13.50	7.75	Computer Horizons	9.00	0.50	5.88
NYS	84.88	52.25	Computer Sciences*	84.50	1.13	1.71
NYS	10.13	7.00	Computer Task Group	9.00	-0.50	-5.88
OTC	40.50	19.00	CompuUSA Inc.	24.50	-1.75	-6.67
OTC	19.25	7.00	Corporate Software (L)	7.00	-1.00	-12.50
OTC	30.75	11.25	Egghead Discount Software	11.25	-7.25	-39.19
NYS	33.38	23.13	General Motors E (EDS)*	28.88	1.25	4.52
OTC	24.38	8.25	Intelligent Electronics	9.13	-1.50	-14.12
OTC	14.88	2.75	Marisel	7.38	-3.38	-31.40
OTC	19.75	7.00	Mercage Inc.	9.25	0.63	7.25
OTC	27.50	14.88	Paychex	24.75	0.38	1.54
NYS	73.00	47.25	Policy Management Sys.	70.63	0.50	0.71
NYS	44.50	19.63	Reynolds and Reynolds (H)	41.50	-2.13	-4.87
OTC	32.00	21.25	SEI Corp.	23.25	0.00	0.00
OTC	24.38	18.66	Shared Medical Systems	19.75	0.63	3.27
OTC	26.25	13.50	Sungard Data Systems	24.00	-1.50	-5.88
NYS	4.50	1.13	Ultimate Corp.	1.75	-0.25	-12.50

Note: Goal Systems Int'l was acquired by Legent Corp. and was removed from our list accordingly.

KEY: (H) = New annual high. (L) = New annual low.

* Companies tracked in Computerworld Stock Index.

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IN BRIEF

Sun suffers profit slide

■ Vicious price-cutting in the workstation arena hit **Sun Microsystems, Inc.**'a bottom line last week as the Mountain View, Calif., company reported that profits for its fiscal fourth quarter declined 43% to $37.7 million from the comparable period last year. Revenue, however, reached a record $972.7 million, up 3% from last year's fourth quarter.

■ Outsourcing giant **Electronic Data Systems Corp.** posted second-quarter earnings of $157.1 million, up 12% from the year-earlier period. Revenue increased 20% to $2.02 billion in the quarter.

■ **Legent Corp.** completed its $400 million acquisition of **Goal Systems International, Inc.** Legent also established a customer service division to be run by former Chief Executive Officer David Wetmore, who joins the company's board of directors. In addition, Legent formed five strategic business units — VSE Data Center Management, Inter-platform Communications, Disaster Recovery, Database Tools and Information Technology.

■ Smarting from losses, application development vendor **Easel Corp.** in Burlington, Mass., has agreed to merge with **Enfin Software Corp.**, an object-oriented tools firm in San Diego, in a stock swap valued at $7.8 million. Sales were up 9% for its second quarter, but Easel reported a $586,000 loss for the quarter, compared with a $1.2 million profit for the same period a year ago.

■ **Seven Rosen Funds** in Dallas has closed on a $65 million venture-capital fund that will address financing needs in the computer, health care, telecommunications and software markets.

DOS applications start gradual decline

BY CHRISTOPHER LINDQUIST
CW STAFF

WASHINGTON, D.C. — DOS is still king of the software hill, according to recent Software Publishers Association (SPA) figures, but the venerable operating system's grip is slipping as graphical user interface (GUI) applications continue an accelerated climb toward the top.

At $647 million last quarter, DOS applications still make up more than half of all software sales in North America. However, that figure indicates a 4% sales decrease relative to the same quarter last year.

It is likely that the decrease is a harbinger of more dramatic slips down the road.

Early sign

"I think if anything there's going to be an acceleration," said Neal Hill, a senior software analyst at Forrester Research, Inc. "It really is the first visible sign of the victory of GUIs vs. character-based interfaces."

Meanwhile, Microsoft Corp. Windows applications leaped some 98% from last year to $311 million. Apple Computer, Inc.'s Macintosh-based software shot up as well — 51%, to $216 million.

RIP DOS?

DOS has begun its decline, while graphical applications are gaining speed



*Includes Apple II, OS/2 and Amiga DOS, etc.

CW Chart: Michael Suggins

While the SPA tracks OS/2 applications sales, these were not among the top three operating environments, according to the association.

In total, according to the SPA figures, application software sales grew 19.8% compared with the first quarter of 1991, to an estimated $1.22 billion.

Word processors continued to dominate the individual category sales charts with sales of $172 million, a 4% increase.

Spreadsheets followed at $165 million, a 9% rise over the same quarter last year.

The largest increase came in the utilities category, which experienced 74% growth over last year, according to the SPA.

The SPA uses sales figures from its more than 900 members to track the personal computer software industry.

Everex, Zeos try to hang on as PC market shakeout nears

BY CAROL HILDEBRAND
CW STAFF

The other shoe has finally begun to drop in the personal computer industry price wars, as the ravaged bottom lines of several second- and third-tier vendors attest to. According to analysts, this is just the beginning of a much-predicted shakeout in the PC arena, and the trend should continue throughout the year.

"It will continue probably this way for the rest of the year, with a fair number of people falling out one way or another. It's not a soft landing; it's hard times," said Michael Murphy, editor of "The California Technology Stock Letter," published in Half Moon Bay, Calif.

One of the worst hit is Everex Systems, Inc., which has announced that it does not expect to be profitable for the quarter that just ended.

The company last week said it is cutting costs by terminating about 10% of its work force, currently at about 2,450 employees, and pruning the number of products available in each of its PC families. There have been reports, on which the company refused to comment, that it would cut as much as 20% of its staff [CW, Aug. 3].

An Everex spokeswoman said the company was aiming to get its operating expenses down from 20% of revenue to 15% or 16%. Research and development will not be affected by the cuts, she said.

> "SMALLER COMPANIES CAN'T fund research and development, marketing and can't afford to play in an expanding game."
>
> RICHARD ZWETCHKENBAUM
> IDC

Also cutting back is Zeos International Ltd., which last week laid off 93 employees in the wake of an $11.1 million loss for the second quarter of 1992, after posting a $1.9 million first-quarter deficit.

Zeos is also facing a cash crisis: The company's line of credit has been halved to $8 million, and Zeos said its bank will not renew the credit line, set to expire in December. The company said that while it had about $748,000 in short-term debt, its long-term ledger is debt-free.

Richard Zwetchkenbaum, an analyst at International Data Corp., a market research firm in Framingham, Mass., said that with all the possible fat squeezed from PC manufacturing and components, the question of survival comes down to available cash.

"It's an expensive game to play in," he said.

With the current price crunch, "smaller companies can't fund research and development, marketing and can't afford to play in an expanding game," Zwetchkenbaum said.

Compaq Computer Corp.'s "advantage is that they can sacrifice short-term profits and throw some money around, and some smaller vendors will not be able to respond," he added.

Zwetchkenbaum pointed to Compaq's recent deal with Conner Peripherals, Inc., in which Compaq sold back its stake in Conner for approximately $80 million, as another bonus cash flow for the company to play with.

IBM execs opt for retirement

BY JOHANNA AMBROSIO
CW STAFF

ARMONK, N.Y. — Approximately a half-dozen IBM executives have taken the company's early retirement option, company spokesmen confirmed last week.

Among the highest ranking executives to leave was Rich Goldberg, assistant general manager of software marketing in IBM's Programming Systems Unit. Another was Dick Butler, director of systems and programming at IBM's Enterprise Systems unit. Neither has taken a position with another company, sources said, although both are said to be considering job offers.

The departure of both men surprised Jim Cassell, an analyst at Gartner Group, Inc. in Stamford, Conn. "They were closet ITO-ers," he said, referring to the Individual Transition Option, the name IBM gave to its early retirement plan. "Both are quality people."

Other IBM executives who left the fold by July 31 include:

- Pat Kearny, general manager of a consulting unit at IBM United States. She reported to Marty Clague, general manager of the Consulting, Software and Services Group.
- Beverly Brown, director of enterprise data marketing at Programming Systems. She reported to Goldberg.
- Kathy Vieth, manager of new development applications for tablet systems. She worked out of the Personal Systems line of business in Boca Raton, Fla.

A spokesman said IBM is sticking with its earlier estimate that 32,000 people — approximately 9% of its work force — will leave by the end of the year under the ITO plan.

Actually, the number of employees leaving the company worldwide will be closer to 35,000 — the majority of them through the early retirement program. The net number of 32,000 is based on the hiring of 3,000 new employees by year's end, the spokesman said, primarily in such areas as technical support, programming and scientific research areas.

The spokesman said it will be at least another week until the final number of U.S. departures is known.

TRENDS

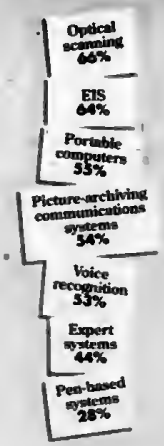
Health care IS

Rising medical costs and patient care concerns drive automation in health care

Technology in favor

High-tech wishes in hospitals include optical scanning technology and EIS

Percentage of respondents eager to have technology



Integration first

Integrating existing applications peaks the most interest of IS officials while the latest and greatest hardware hardly raises their pulse rates

Percentage of respondents concerned with issue

Top challenges during next two years

- Integrate existing applications — 16%
- Increase use/acceptance of applications by care providers — 27%
- Establish remote links to physicians — 11%
- Tailor existing applications to better meet needs — 8%
- Acquire new applications — 6%
- Other — 2%
- Upgrade current hardware — 0%

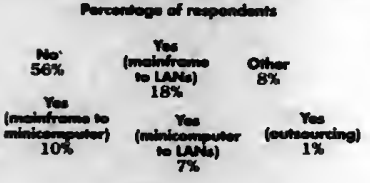
HRx priorities

Health care IS executives' goals for technology in 156 hospitals are nearly identical to that of their peers in other industries. The top goal is management. The biggest exception: Only 7% of respondents expect technology to generate additional revenue compared with 15% for other industries.

Downsizing . . . not!

Although not planning to upgrade hardware, most sites are committed to their mainframes — with no plans to downsize in the coming year

Percentage of respondents



Base: 548 health care professionals

Source: Hewlett-Packard Co., Healthcare Information and Management Systems Society, Business Research Group

CW Chart: Michael Siggins

INSIDE LINES

A separate peace

▶ Mark Sept. 2 as the date for IBM to announce that it will spin off its Personal Systems Division as a wholly owned subsidiary, according to sources close to the company. IBM will keep the RISC-based Advanced Workstations Division within IBM proper, but it is looking to split off OS/2 and the PC hardware group into one separate unit, sources said.

Complexity breeds delays

▶ IBM is telling customers in briefings that software to enable Sysplex — or the linking of many high-end processors into one — will be delayed. The Sysplex version of CICS, for example, was originally slated to be available next year but has been delayed until 1994.

Building a bigger Sun(dial)

▶ Just shy of its one-year anniversary, the SunExpress telephone sales subsidiary of Sun Microsystems is shifting its focus to concentrate more on end users than on VARs. Next week, the company will announce a new pricing structure and changed business plan to grab more user interest.

Less risky approach

▶ It looks like Amdahl's forthcoming parallel processor will be positioned against other RISC-based servers, such as DEC's Alpha machines. Last week, Amdahl CEO Joseph Zemke hinted that shipments of Amdahl's SPARC-based parallel processor, which would host Unix applications and relational databases, would begin in 1993. Zemke told analysts that Amdahl's knowledge of mainframes would give it a performance advantage over other vendors' RISC computers.

Transaction reaction

▶ A face-off between benchmark auditors over Transaction Processing Performance Council (TPC) policies raised some hackles at a San Francisco software conference last week. David McGoveran, a Santa Cruz, Calif., database specialist who audits TPC benchmarks for corporate customers, charged that the TPC's vendor-heavy membership creates "self-serving benchmarks" that are used out of context in industry advertising. "The specs allow the vendors to waffle on the benchmarks," said McGoveran, who also criticized closed meetings at the TPC's San Jose, Calif., offices. Tom Sawyer, an independent auditor who verifies official TPC results, responded by saying the TPC advisory council is a serious oversight group that forces vendors to resubmit questionable test results. Both auditors noted that vendors also have the right to refuse to publish unfavorable test results.

Midrange midlife kicker

▶ IBM is a month away from expanding its AS/400 line, according to sources. A high-end model with a four-way processor is in the offing and is currently installed at several customer sites, according to one analyst.

Freeze! This is a RAID.

▶ Ten systems and storage companies, including IBM, NCR and Seagate Technology, formed a RAID Advisory Board last week. The firms are promoting disk array storage standards, according to Joe Molina, chairman of the new group. But the notion of setting RAID standards left one storage analyst shrugging his shoulders. "Users aren't looking for standards. Most haven't even seen arrays in operation," said Jim Porter at Disk/Trend in Mountain View, Calif.

Philip Stromer filed a lawsuit against Sun after he was fired from his technical writer position for alledgedly using his work computer to hurl graphic and insulting messages across a companywide, national E-mail network. Stromer, who admits he pushed the boundaries of good taste, said his intent was purely sarcastic, and he always signed his own name to the messages. In the lawsuit filed in California's Santa Clara County Superior Court, Stromer says Sun violated his right to free expression. Readers have a right to free expression, too. Phone, fax or CompuServe News Editor Alan Alper with news tips at (800) 343-6474, (508) 875-8931 or 76537,2413, respectively. Or try Computerworld*'s 24-hour voice-mail tip line at (508) 820-8555.*

NEXT WEEK

John Seely Brown, ▶ the director of Xerox's Palo Alto Research Center, says PARC is hot on the trail of ubiquitous computing. The idea is to get rid of interfaces, embedding computers into everyday surroundings and objects (like sketch pads). It'll take wireless nets, advanced chips and smart badges, but computing will come to the masses. See In Depth.



Tom Zimberoff

Road warriors, step aside: Today, everyone in the corporation wants to travel with PC in hand — not to mention with modem and fax and printer in hand as well. With all those people working remotely, IS has a new job description: choosing worthy peripherals that won't require tons of support. For a look at available travel accessories, see Product Spotlight.

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Four out of five 1-2-3 users prefer Quattro Pro

When a group of Lotus 1-2-3 users compared Quattro® Pro 4.0 and 1-2-3 side-by-side, they made a startling discovery: four out of five Lotus users preferred Quattro Pro. They found it easier to use, richer in features, and more productive. The study was done by Usability Sciences Corporation, a highly regarded independent testing laboratory. (Coincidentally, this is the same company Lotus uses to do its usability studies.)

Borland dumps old Lotus menus, keeps macro compatibility

About 90% of Quattro Pro users use only the Quattro Pro native menus. They no longer use the old Lotus slash key. And it's now obvious that Lotus doesn't want other companies supporting its outdated user interface either. Therefore, Borland has decided to give users what they prefer. Borland is now shipping Quattro Pro 4.0 with only the more efficient native menus—the ones users love. And Quattro Pro still has 1-2-3 file, publishing style, and macro compatibility.

The final mistake: Lotus goes it alone

Lotus' latest strategy of closing the menu-command standard is the final blow to users. After all, what is Lotus known for? *The best technology?* Certainly not. *The best spreadsheet?* Not even close. *Litigation rather than innovation?* Absolutely. And now Lotus is on the verge of losing its largest asset: users who have invested in the Lotus menu standard. By making its menu system a closed standard, Lotus is not the only loser. You lose, because Lotus is apparently trying to eliminate your right to choose. Fortunately, you don't lose much, because 1-2-3 users prefer Quattro Pro's better design and Quattro Pro can still run their 1-2-3 macros.

Quattro Pro 4.0 is . . .

". . . the best DOS spreadsheet you can buy."
PC/Computing, March 1992

". . . the ultimate DOS spreadsheet."
PC Magazine, April 28, 1992

". . . the best non-Windows spreadsheet . . ."
PC World, March 1992

". . . the best DOS spreadsheet ever."
Office Technology Management, February 1992

"The best DOS spreadsheet in the world."
PC User (U.K.), March 24, 1992

Lotus closes standard, loses the war

So Lotus may have won a small battle by keeping a menu system to themselves, but they'll lose a very big war with their Berlin Wall customer strategy. Borland, on the other hand, has always believed that open standards promote competition, spur innovation, and grow markets.

Lotus and Ashton-Tate: history repeats itself

Ashton-Tate® tried to establish a closed standard too. They tried to force users into their camp and to keep out the competition through litigation. Borland's acquisition of Ashton-Tate reversed this. Borland dropped Ashton-Tate's lawsuit against Fox and paved the way for competing products from several companies. Customers have won, because they can freely choose other products compatible with the open dBASE® standard.

Quattro Pro: the best DOS spreadsheet

Quattro Pro has won 42 awards, dwarfing Lotus in side-by-side comparisons. And Quattro Pro 4.0 has been called the best DOS spreadsheet by leading computer trade publications. It's proof that competition works.

You be the judge

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